

Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

Monthly Progress Report December 2009



**TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE**

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Released: January 2009



Existing Bridge Span YB4 Demolition in Progress



TOLL BRIDGE SEISMIC RETROFIT AND REGIONAL MEASURE 1 PROGRAMS

**MONTHLY PROGRESS REPORT
DECEMBER 2009**



**TOLL BRIDGE PROGRAM
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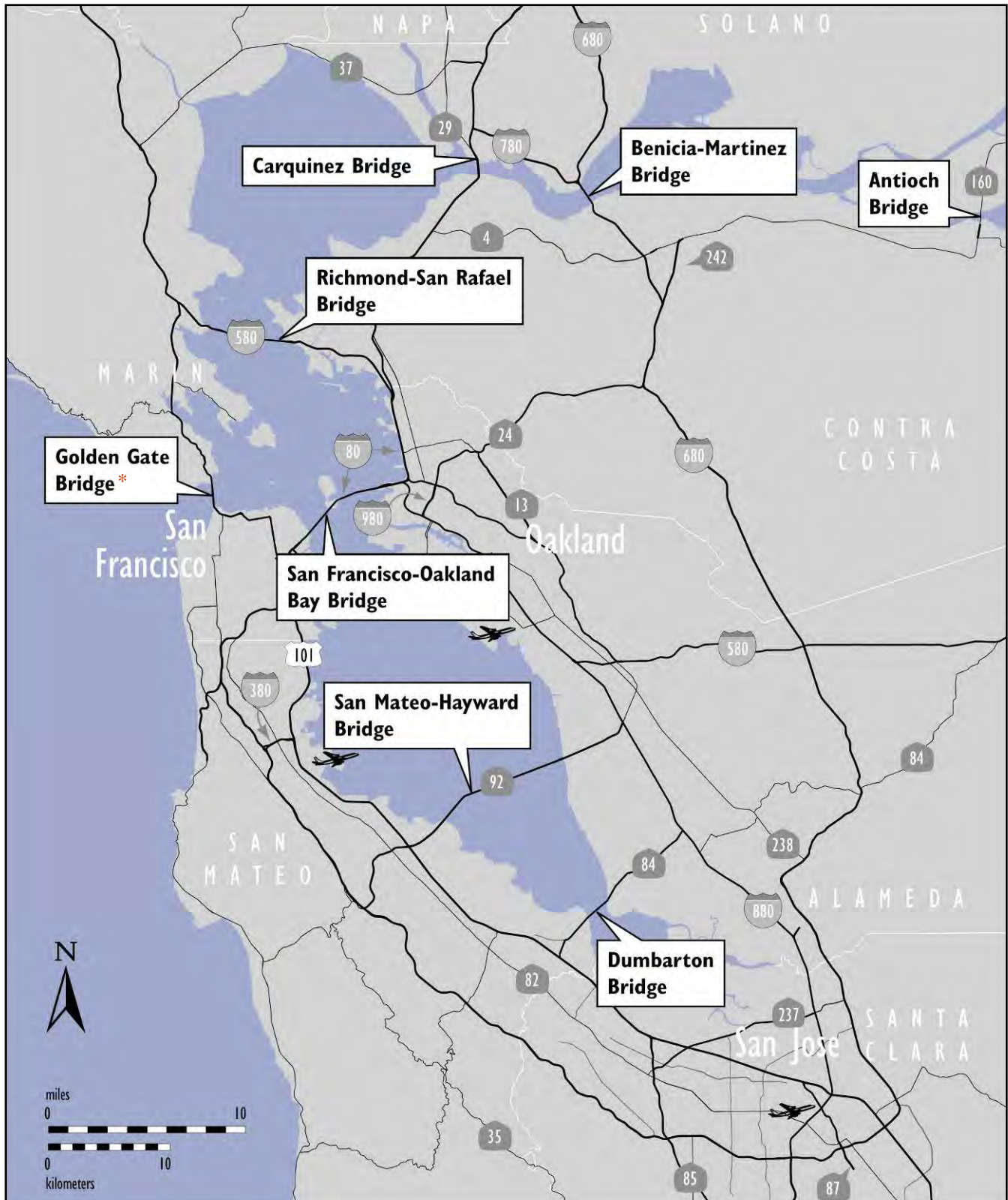
CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



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Map of Bay Area Toll Bridges



* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open



SAS OBG Segments Being Shipped



SAS Tower Lift 1 South and East Shaft Temporary Elevator Being Installed on Heavy Duty Dock

SUMMARY OF MAJOR PROJECT

Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 Assembly Bill 144, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. We have reached a milestone with our risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today.

A comprehensive risk assessment is performed for each project in the program. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, we want to ensure that the public is informed of the risks we have identified and the possible expense they could necessitate.

Based upon the Second Quarter 2009 Risk Management Report, we have identified a \$500-\$700 million in risks to the program contingency, which is a slight increase from the last quarter. It is important to note that our \$690 million budgeted program contingency is sufficient to cover the risks to an 80 percent confidence level. We will continue to work on mitigating these risks to reduce the potential draw on contingencies. Further details on identified risks are included in the contract summaries.

San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project

SAS Superstructure Contract

The prime contractor constructing the Self-Anchored Suspension Bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). The primarily steel bridge is being fabricated around the world in components. Temporary steel structures have been and are continuing to be erected in the San Francisco Bay to support the new bridge during construction.

The contractor has reported that fabrication of the steel tower and roadway boxes has fallen 15 months behind schedule due to the complexity of the design and



SFO Bay Bridge East Span Detour Structure East Tie-In Span Completed over the Labor Day Weekend

fabrication. The first shipment of roadway boxes (segments 1 through 4) were shipped on December 30, 2009, while the first tower segments are not expected until next year. All components have undergone a rigorous quality review by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC), ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

On the critical path to completing the bridge is the fabrication of the last two roadway sections at the east end of the new span (Segments 13 and 14). Fabrication of these segments has fallen behind schedule due to delays in the fabrication drawing preparation process. The TBPOC is exploring options to improve review times and communication, including locating additional design staff with shop drawing drafters in Vancouver, Canada. These delays are likely to prevent the westbound opening of the bridge in 2012, but we continue to push for full opening of the bridge in 2013.

Caltrans has established risk management teams to evaluate these challenges and to identify future potential risks to completing the project on time and on budget. In particular, teams are reviewing cable-erection plans and mitigation actions. Based on the latest risk management assessment, there is a potential for a \$260 million increase on the SAS contract.

Yerba Buena Island Detour Contract

The Yerba Buena Island Detour contractor, C.C. Myers, has rolled out the existing bridge span and rolled in the new east tie-in span of the detour structure that diverts traffic off the existing bridge to the detour structure that now ties into the Yerba Buena Island Tunnel. The traffic switch occurred as scheduled on Labor Day weekend. The contractor continues to make progress on a number of accelerated foundations for the future transition structure from the Self-Anchored Suspension (SAS) bridge to the tunnel.

Based on the last completed risk management assessment, which retired 20 million dollars in previously reported risks, there remains a potential for an \$11 million increase for the contract. This assessment is expected to continue; however to decrease next quarter. Remaining risks include unexpected construction challenges during demolition of the old structure. These challenges are being addressed via collaborative on-site meetings between Caltrans and the contractor to actively identify and resolve issues early and at the lowest cost.

On December 15, 2009, Caltrans opened three bids for the Yerba Buena Island Transitions Structures (YBITS) #1 contract. All three bidders submitted bids substantially lower than the engineer's estimate. The apparent low bid was \$80.8 million versus a call-out estimate of \$167 million. Caltrans is checking the bids and will determine the lowest responsive bidder in January 2010.



SFO Bay Bridge East Side View of YB4 Demolition in Progress

SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Oakland Touchdown Falsework Removed



Oakland Touchdown Eastbound Hinge Pipe beam Inserted between OTD and Skyway



Dumbarton/Antioch Bridges Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing

Oakland Touchdown Contract

The Oakland Touchdown (OTD) contractor, MCM, continues to be ahead of schedule and has opened construction access on the new westbound OTD structure to the Skyway. Work continues on the eastbound structure.

TBSRP Capital Outlay Support

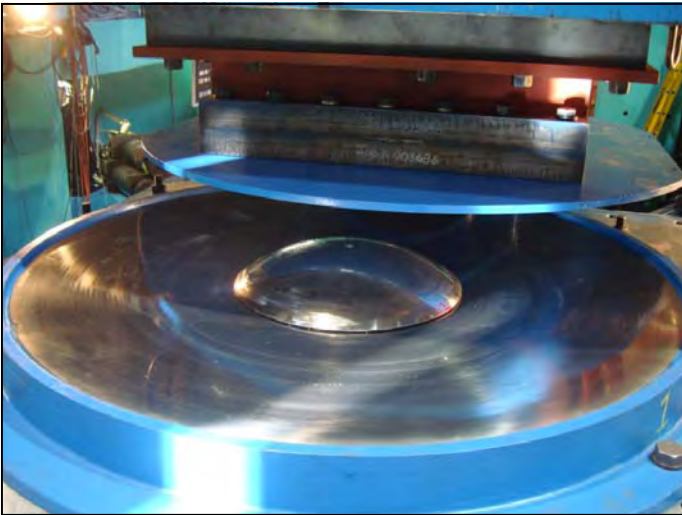
Based on initial discussions with our contractors, early completion of the East Span Project was believed to be possible and sufficient to mitigate potential identified support cost increases. The support cost increases are due primarily to the need to re-advertise the SAS contract and to decisions made to increase our opportunities for early completion of the East Span Project and potential for support cost savings. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract and extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west-end deck reconstruction. Since we now judge early completion and the intended cost savings to be unlikely, we forecast a potential drawdown of \$244 million from the program contingency for project support. Further increases in project support costs would be expected if the project is delayed beyond the 2013 forecast bridge opening date.

TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for delays on one contract to impact the other contracts.

Seismic Retrofit of the Dumbarton and Antioch Bridges

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state-owned toll bridges to be in need of seismic retrofit, which excluded the Dumbarton and Antioch Bridges. Further seismic vulnerability studies were completed by Caltrans and BATA on those structures and determined that both structures were in need of retrofit based on current seismic standards. On November 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 which added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the



Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



New Pedestrian Bicycle Path on Benicia-Martinez Bridge Under Construction



Site Preparation for New Route 92 and Interstate 880 Separator

seven State-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch Bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits have been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope which have minimized cost risks.

Regional Measure 1 Toll Bridge Program (RM1)

New Benicia-Martinez Bridge Project

On August 29, 2009, Caltrans, BATA and a number of dignitaries celebrated the substantial completion of the rehabilitation of the 1962 Benicia-Martinez Bridge. As the last major contract of the New Benicia-Martinez Bridge Project, the rehabilitation project converted the existing bridge to carry southbound-only Interstate 680 traffic. The work included adding a new southbound traffic lane (opened in early August 2009), shoulders and a new bicycle/pedestrian pathway. The project is now complete.

Interstate 880/State Route 92 Interchange Reconstruction Project

On this interchange reconstruction contract, the new east Route 92 to North Interstate 880 direct connector structure (ENCONN) was completed and opened to detour traffic on May 16, 2009. Work is ongoing on a new separator structure. Caltrans and BATA have revised the support forecast for the project. An increase in support is due to extended advertisement for the project and weather delays. The project is still forecast to be completed as planned in June 2011.

Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (Jul 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (November 2009)	Cost to Date (November 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
SFOBB East Span Seismic Replacement								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	275.0	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	836.1	2,014.1	260.4	●
YBI Detour	Construction	132.0	360.8	492.8	399.3	504.0	11.2	●
YBI Transition Structures (YBITS)		299.3	(23.2)	276.1	-	285.9	9.8	●
YBITS 1	Bids Opened	-	-	-	-	223.2	-	●
YBITS 2	Design	-	-	-	-	59.4	-	●
YBITS Landscaping	Design	-	-	-	-	3.3	-	●
Oakland Touchdown (OTD)		283.8	-	283.8	197.0	289.0	5.2	●
OTD 1	Construction	-	-	-	189.1	211.0	-	●
OTD 2	Design	-	-	-	-	64.0	-	●
OTD Electrical Systems	Design	-	-	-	-	4.4	-	●
Submerged Electric Cable	Completed	-	-	-	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	232.1	(7.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.3	-	90.3	89.2	90.3	-	●
Capital Outlay Support		959.3	-	959.3	791.1	1,203.1	243.8	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.2	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
Total SFOBB East Span Replacement		5486.6	266.1	5,752.7	3,893.2	6,251.9	499.2	
SFOBB West Approach Replacement								
Capital Outlay Construction	Completed	309.0	41.7	350.7	328.0	338.1	(12.6)	●
Capital Outlay Support		120.0	-	120.0	116.8	117.0	(3.0)	●
Total SFOBB West Approach Replacement		429.0	41.7	470.7	444.8	455.1	(15.6)	
Completed Program Projects	Completed	1,839.4	(97.5)	1,741.9	1,712.6	1,741.9	-	●
Miscellaneous Program Costs		30.0	-	30.0	24.7	30.0	-	●
Net Programmatic Risks		-	-	-	-	165.4	165.4	●
Program Contingency		900.0	(210.3)	689.7	-	40.7	(649.0)	●
Total Toll Bridge Seismic Retrofit Program		8,685.0	-	8,685.0	6,075.3	8,685.0	-	●

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (Jul 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
SFOBB East Span Seismic Replacement							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 32
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 22
SAS Superstructure	Mar 2012	12	Mar 2013	Mar 2013	-	●	See Page 23
YBI Detour	Jul 2007	41	Dec 2010	Dec 2010	-	●	See Page 16
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 20
YBITS 1			Sep 2013	Sep 2013	-	●	
YBITS 2			Nov 2014	Nov 2014	-	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Nov 2014	-		See Page 33
OTD 1			May 2010	May 2010	-	●	
OTD 2			Nov 2014	Nov 2014	-	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Sep 2015	-	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
SFOBB East Span Bridge Opening and Other Milestones							
OTD West bound Access			Jan 2010	Jan 2010	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 18
Westbound Open	Sep 2011	12	Sep 2012	Dec 2012	3	●	
Eastbound Open	Sep 2012	12	Sep 2013	Sep 2013	-	●	
SFOBB West Approach Replacement							
Contract Completion	Aug 2009	(7)	Jan 2009	Jan 2009	-	●	

Notes: 1) Figures may not sum up to totals due to rounding effects.
 2) TBSRP Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with quarterly risk analysis assessments for the TBSRP Projects.

Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (Jul 2005)	BATA Approved Changes	Current BATA Approved Budget (November 2009)	Cost to Date (November 2009)	Current Cost Forecast (November 2009)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
New Benicia-Martinez Bridge								
Capital Outlay Construction	Construction	861.6	174.0	1,035.6	997.7	1,035.6	-	●
Capital Outlay Support		157.1	35.1	192.2	191.2	192.2	-	●
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-	●
Project Reserve		20.8	3.6	24.4	-	24.4	-	
Total New Benicia-Martinez Bridge		1,059.9	212.6	1,272.5	1,205.9	1,272.5	-	
Interstate 880/Route 92 Interchange Reconstruction								
Capital Outlay Construction	Construction	94.8	60.2	155.0	80.8	155.0	-	●
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-	●
Project Reserve		0.3	9.4	9.7	-	9.7	-	
Total I-880/SR-92 Interchange Reconstruction		133.8	111.2	245.0	143.4	245.0	-	
Completed Program Projects		918.9	(30.0)	888.9	878.6	888.9	-	
Total Regional Measure 1 Toll Bridge Program		2,112.6	293.9	2,406.4	2,227.9	2,406.4	-	

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (Jul 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (November 2009)	Current Completion Forecast (November 2009)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
New Benicia-Martinez Bridge							
Contract Completion							
1962 BM Bridge Reconstruction	Dec 2009	(4)	Aug 2009	Aug 2009	-	●	See Page 48
New Benicia-Martinez Bridge Opening Date							
New Bridge	Dec 2007	(4)	Aug 2007	Aug 2007	-	●	
Interstate 880/Route 92 Interchange Reconstruction							
Contract Completion							
Interchange Reconstruction	Dec 2010	6	Jun 2011	Jun 2011	-	●	See Page 50

Notes: 1) Figures may not sum to totals due to rounding effects.





TOLL BRIDGE SEISMIC RETROFIT PROGRAM

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San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



Overview of the Completed West Approach Replacement Structure

West Approach Seismic Replacement Project

Project Status: Completed 2009

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

West Span Seismic Retrofit Project

Project Status: Completed 2004

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



West Span of the Bay Bridge



East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile-long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views will also be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the East Span's side-by-side traffic to the upper and lower decks of the tunnel and West Span.

When construction of the new East Span is complete and vehicles have been safely rerouted to it, the original East Span will be demolished.



Architectural Rendering of the New Self-Anchored Suspension Bridge on the East Span of the Bay Bridge





Yerba Buena Island Transition Structures Looking West

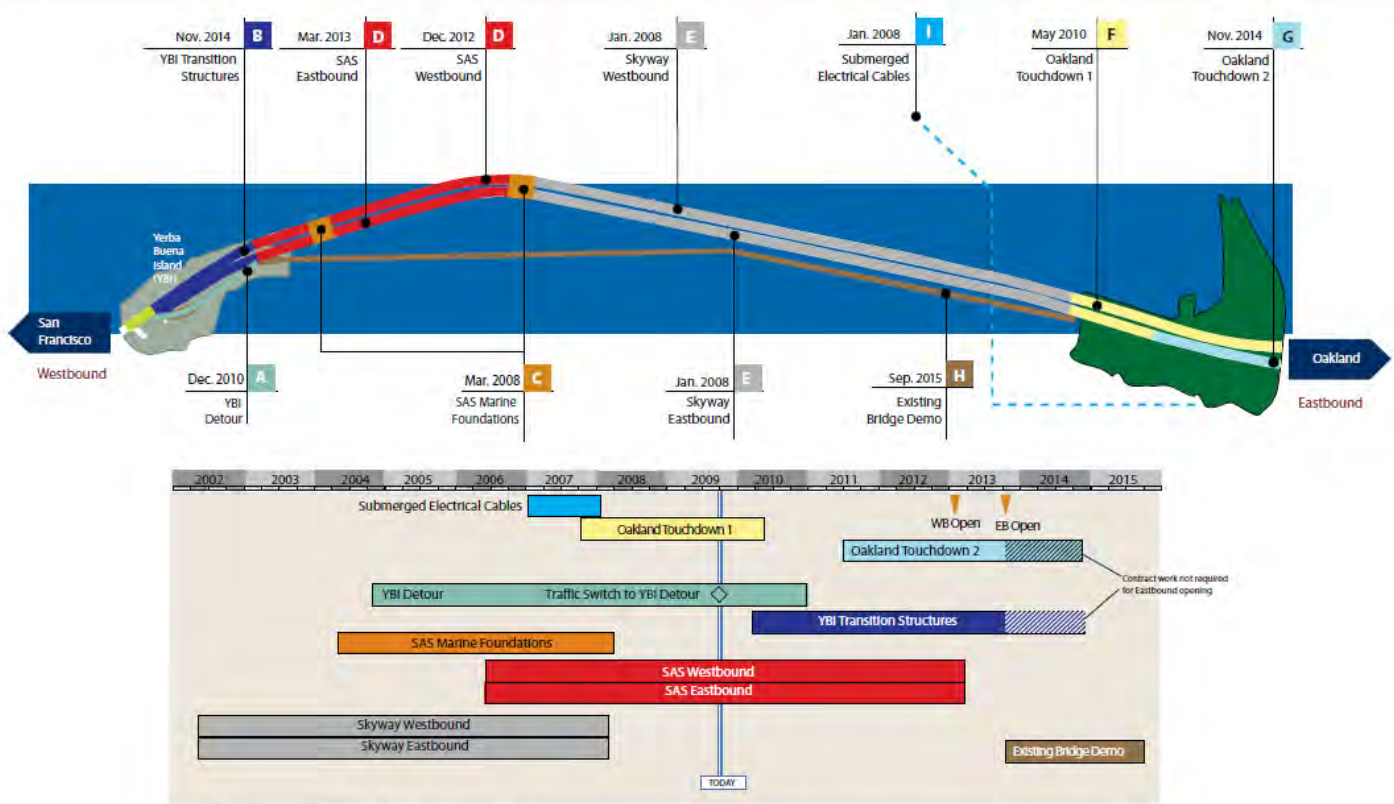
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that all have been sequenced together.

Highlighted below are the major East Span contracts, including their schedules. The letter designation before each contract corresponds to contract descriptions in the rest of the report.

SFOBB East Span Work Sequence



Note: Dates shown above are forecast completion dates.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this daunting task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

A YBID Contract

Contractor: C.C. Myers Inc.

Approved Capital Outlay Budget: \$492.8 M

Status: 82% Complete as of November 2009

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure.

These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.



Successful Labor Day Weekend 2007 Roll-In Structure to the Tunnel

Tunnel Approach Roadway Replacement

The first in a series of activities to open the detour viaduct was completed in 2007 with the replacement of a 350-foot-long stretch of upper-deck roadway just east of the Yerba Buena Island Tunnel. During this historic milestone, the entire Bay Bridge was closed over the 2007 Labor Day weekend so crews could demolish and replace the old section of the deck with a seismically upgraded 6,500-ton precast section of viaduct that was literally pushed into place (see photo above).

Status: Completed.



Detour Viaduct Fabrication and Construction

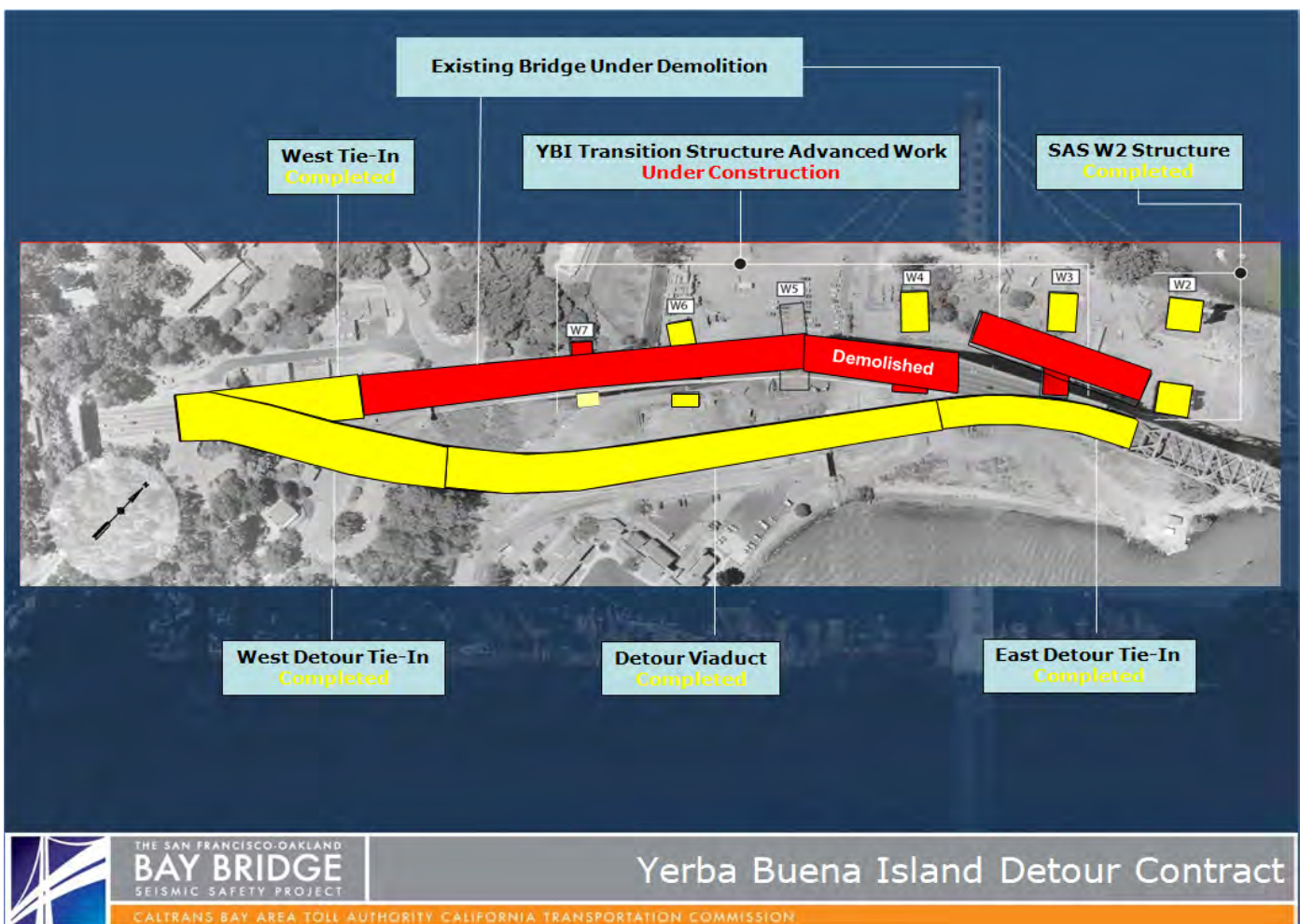
The detour viaduct runs parallel to the existing lanes on the island and ties back into the existing bridge and tunnel. Speed limits have been reduced due to the turns needed to get on and off the detour. The viaduct looks quite similar to the existing bridge, with steel cross beams and girders and a concrete roadway deck. To ensure a good fit, the steel viaduct truss members were pre-fitted during fabrication in South Korea and Oregon.

Status: Completed.

Demolition of Existing Viaduct

After shifting traffic onto the detour structure, crews will focus on the demolition of the existing bridge structure into the tunnel. The old transition structure will need to be removed before construction of the new transition structures from the SAS bridge to the YBI Tunnel can be completed.

Status: Started in early September 2009 and is forecast to be completed in May 2010.



Overview of Yerba Buena Island Detour Contract Scope of Work and Current Status



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Yerba Buena Island Detour (YBID) Existing Bridge Demolition

Shifting traffic to the Yerba Buena Island Detour was the most significant realignment of the bridge to date. To accomplish this, crews cut away a 288-foot portion of the existing truss bridge and replaced it with a connection to the detour. This dramatic maneuver involved aerial construction that occurred more than 100 feet above the ground. Vehicles will travel on the detour until the completion of the new East Span.

This “S” curve detour now allows for the Yerba Buena Island demolition of the existing structure to proceed. This is a critical step in the overall East Span bridge construction.

Status: Demolition of the existing structure is underway.



Yerba Buena Island Detour Existing Viaduct Span YB4 Demolition Overview



Completed Yerba Buena Island Detour East Tie-In Roll-Out/Roll-In Structure

San Francisco-Oakland Bay Bridge East Span Replacement Demolition Progress



Yerba Buena Island Existing Bridge Span YB2 Demolition in Progress



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

B YBITS #1 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$223.2 M

Status: Bids Opened December 15, 2009

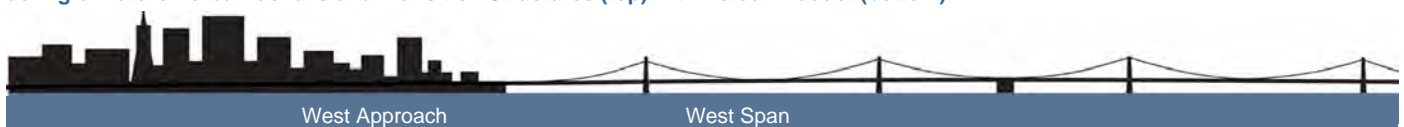


Yerba Buena Island Transition Structures Columns W4 and W3 Looking West

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. Work on the structures is scheduled to start once the existing structures have been demolished and removed from the site. The bid was opened on December 15, 2009 with the contractor, MCM, having the lowest bid contract.



Rendering of Future Yerba Buena Island Transition Structures (top) with Detour Viaduct (bottom)



YBITS #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$59.4 M

Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

YBITS Landscaping Contract

Contractor: TBD

Current Capital Outlay Forecast: \$3.3 M

Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

Yerba Buena Island Transition Structures Advanced Work

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.

Status: Advanced foundations and columns for the left piers of W3, W4, W6 and W7 are under construction. Work at pier W5 is pending removal of the existing transition structure. See page 17 for a diagram of pier locations.



YBITS Columns W6 to W7



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows world class status on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts—construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.

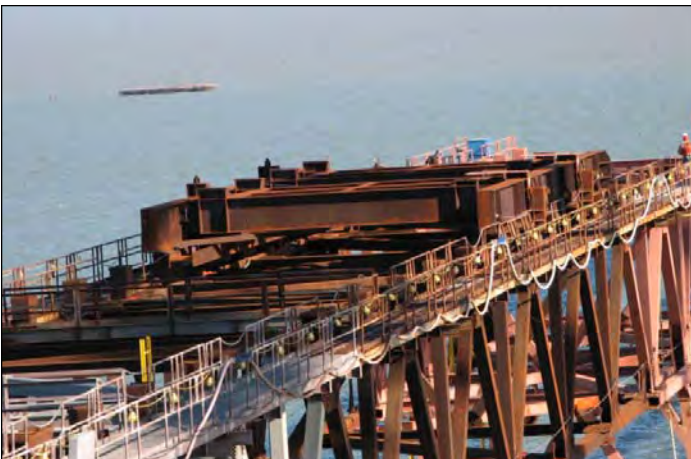
SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.



SAS OBG Cradle Erected on top of Westbound Temporary Structure



SAS T1 Trestle Construction Overview

C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.

D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1,753.7 M

Status: 46% Complete as of November 2009

Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. The SAS bridge is not just another suspension bridge. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the box girders. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single steel tower will be made up of four separate legs and the tower head connected by shear link beams, which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Construction Sequence

STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

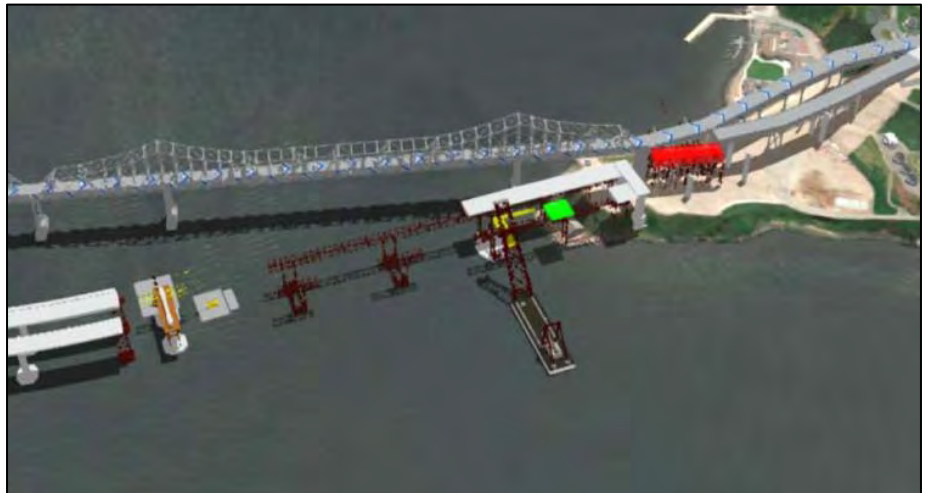
Status: Foundations for the temporary supports are complete. Support structures are now being installed from west to east.



STEP 2 - INSTALL ROADWAYS

The roadway boxes will be lifted into place by using the shear-leg crane barge. The boxes will be bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

Status: The Roadway Box segments are being fabricated (see page 26 for more information). OBG lifts 1 though 4 eastbound and westbound shipments were shipped on December 30, 2009.



STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The first lift will use the shear-leg crane barge while the remaining higher lifts will use a temporary support tower and lifting jacks.

Status: The first shipment of tower sections is being fabricated and is forecast for shipment in mid - 2010 (see page 26 for more information).



STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around the west end before returning back. Suspender cables will be added to lift the roadway decks off the temporary support structure.

Status: Cable installation is pending the erection of the tower and roadway spans. Shipment for the first half of the cables is forecast for January 2010.



STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures. Westbound access to the Skyway from Oakland will be completed by the Oakland Touchdown #1 contract in 2009.

Status: Westbound opening is forecast for the third quarter of 2012.



STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown #2, which needs westbound traffic off the existing bridge before the eastbound approach structure can be completed.

Status: Eastbound opening is forecast for third quarter 2013.



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities

Nearly every component of the SAS above the waterline—from the temporary support structures to the roadway and tower box sections to the main cable and suspender ropes—will be fabricated off-site and erected into place upon arrival in the Bay Area. This project is truly global in nature, with fabrication of the bridge components occurring not only in the United States but around the world—in China, the United Kingdom, Japan, South Korea and other locations.

Roadway and Tower Segments

Like giant three-dimensional jigsaw puzzles, the roadway and tower segments of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

Status: The contractor has reported that fabrication of the steel tower and roadway boxes has fallen 15 months behind schedule due to the complexity of the design and fabrication.

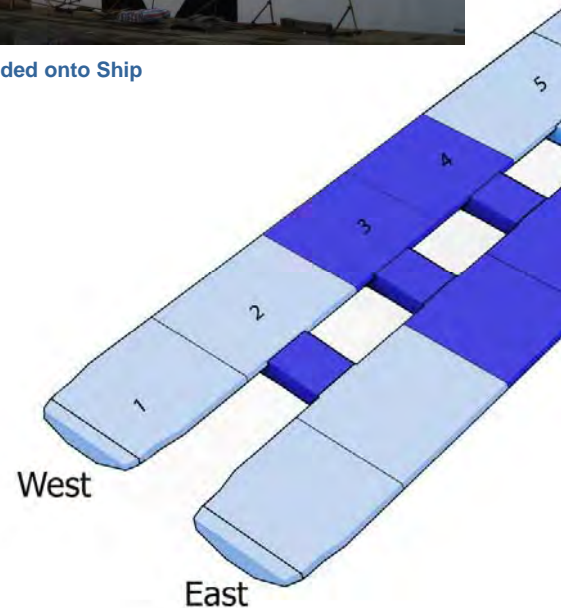
As shown in the diagram to the right, roadway segments 1 to 11 are in segment assembly or further along in the process, while segment 12 is in subassembly fabrication. Tower segments 1 to 4 are in various stages of fabrication. The first shipment of roadway boxes (segments 1 through 4) are anticipated by the end of the year, while the first tower segments are expected next year.

All components have undergone a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped.

On the critical path to completing the bridge are the fabrication of the last two roadway sections (segments 13 and 14). Start of fabrication of these segments has fallen behind schedule due to delays in the fabrication drawing preparation process. The TBPOC continues to execute and explore options to improve review times and



SAS Lift 3W Being Loaded onto Ship



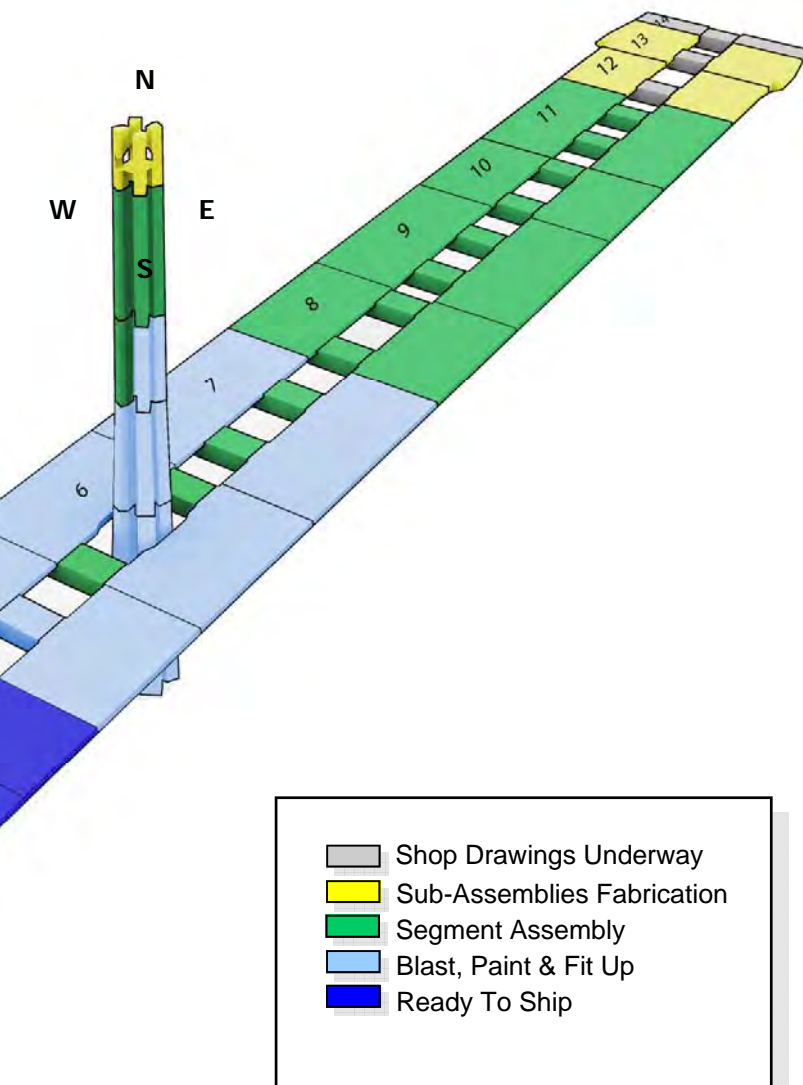
communication, including locating additional design staff with shop drawing drafters in Vancouver, Canada.

These delays will likely prevent the westbound opening of the bridge in 2012, but we continue to estimate for full opening of the bridge in 2013 (see additional progress photos on pages 68 through 69).



Fabrication Progress Diagram

Through December 31, 2009



SAS Tower East and West Shaft Lift 1 Placed onto the Base Plate



SAS Tower Lift 4 West Shaft in Rotating Position Shop 11



SAS Tower Shaft Lifts 1 West Moved to Heavy Dock for Vertical Tipping

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)

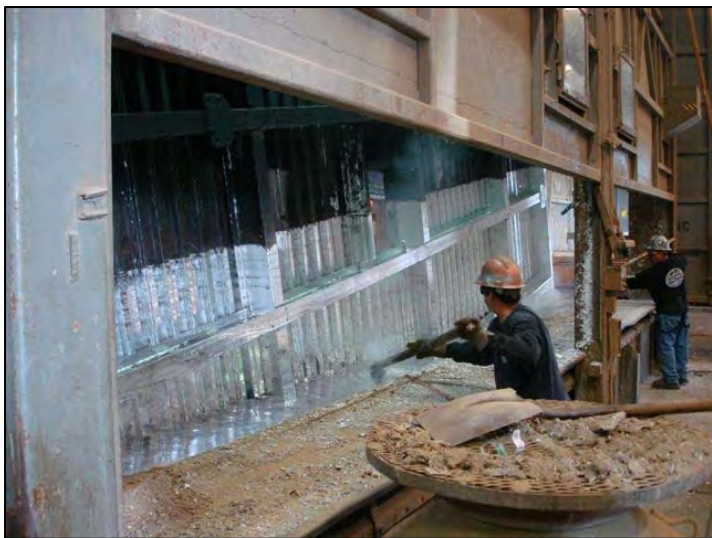
Cables and Suspenders

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will start on the east end of the box girder, go over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then go back over the main tower to the eastern end of the box girder. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

Status: Initial trial testing of the main cable strands was performed in September 2009. The first half of the cable shipment is anticipated in January of 2010.



SAS Cable Band Machining



SAS Service Platform Upper-Frame Galvanizing, California

Saddles, Bearings, Hinges, and Other Bridge Components

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and South Korea, while hinge pipe beams are being fabricated in Oregon, USA.

Status: The cable saddles and hinges at the W2 cap beam and YBITS are under fabrication. The hinges in between the Skyway and Oakland Touchdown have been installed.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Field Activities



Shear-Leg Barge Crane Lifting a Section of SAS Temporary Support Structure

Shear-Leg Barge Crane

The massive shear-leg barge crane that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity dubbed the "Left Coast Lifter." The 400-by-100-foot barge is a U.S. flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane's boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower sections for the SAS.

The crane has off-loaded all temporary structures shipped to date and has lifted 85 percent of the temporary structures into place. Work on the eastbound side of the SAS must occur first, as the crane cannot reach over permanent westbound decks to work on the eastbound roadway.

Status: The shear-leg crane arrived at the jobsite March 2009



SAS View from East of E2

Cap Beams

Construction of the massive steel-reinforced concrete cap beams that link the columns at piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

Status: Completed March 2009

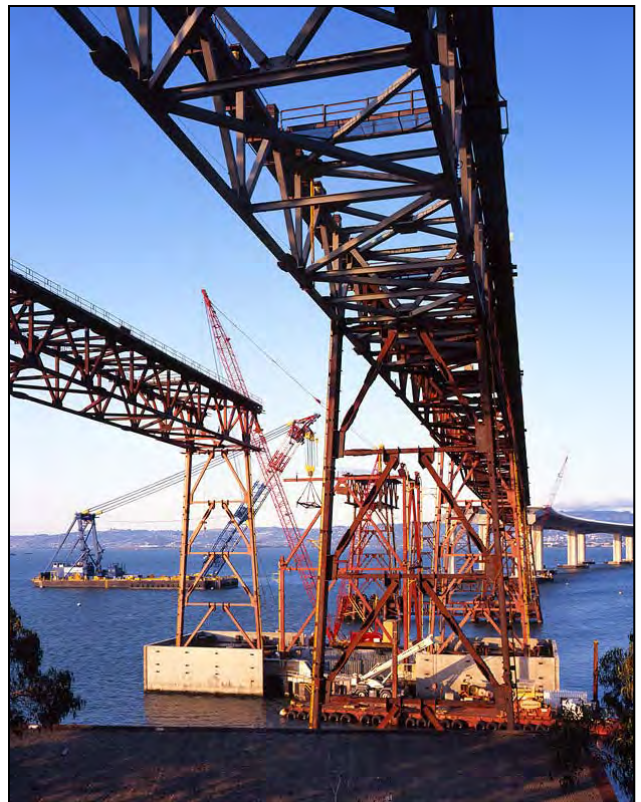
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Field Activities

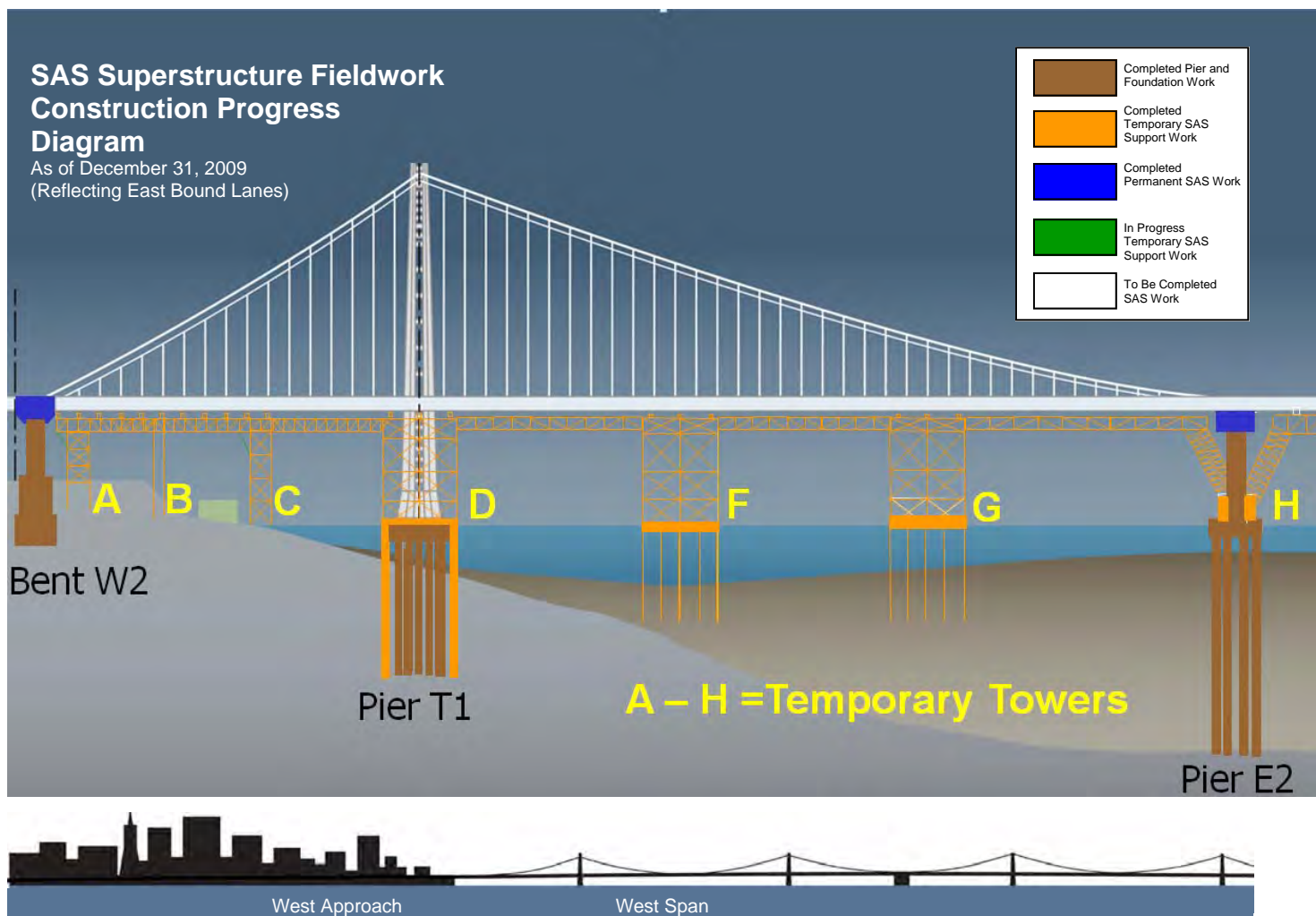
Temporary Support Structures

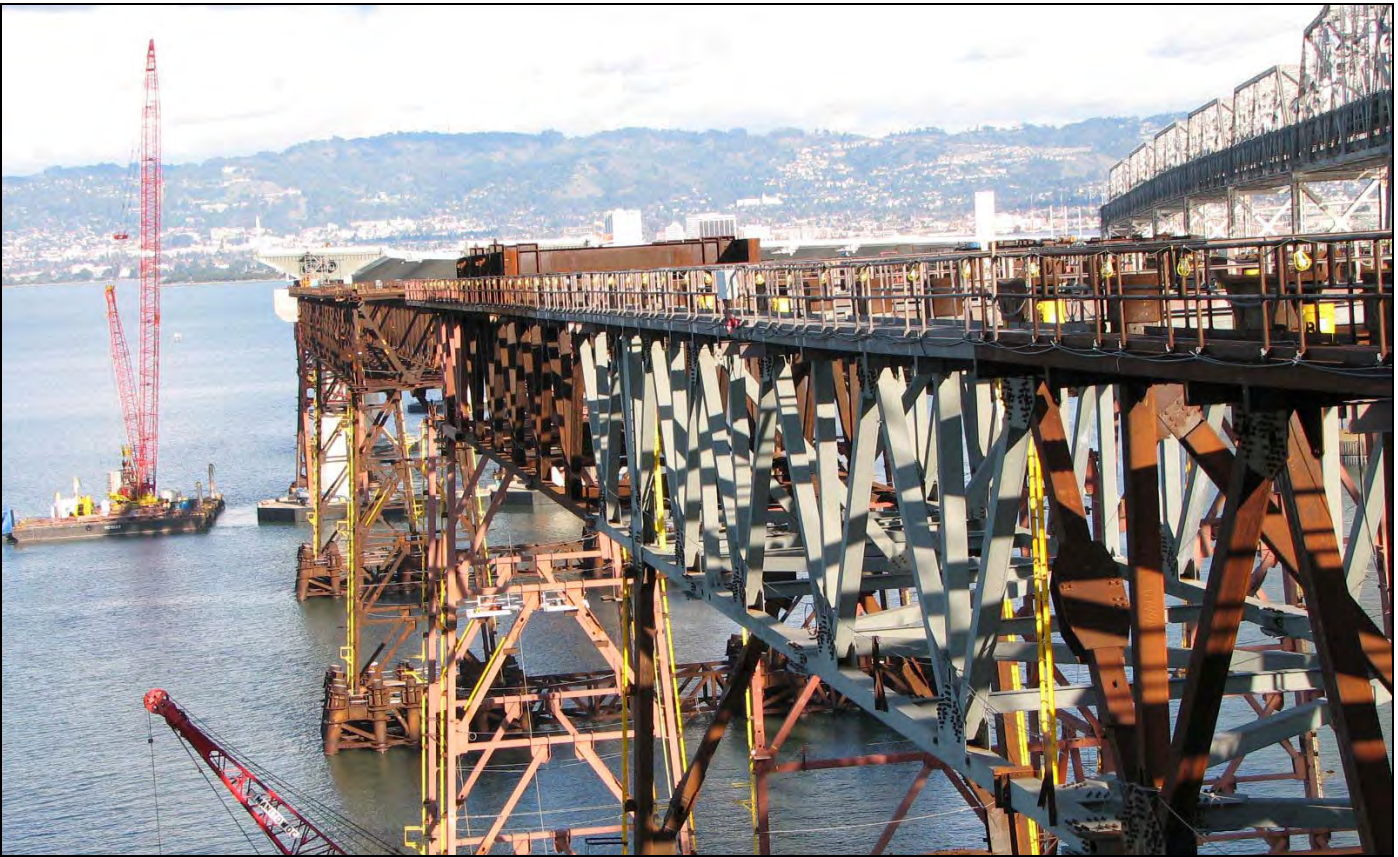
To erect the roadway decks and tower of the bridge, temporary support structures will first be put in place. Almost a bridge in itself, the temporary support structures will stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower's temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

Status: The temporary support foundations and six temporary towers have been completed and 85 percent of the temporary structures are in place.



SAS Eastbound and Westbound Temporary Support Structures





SAS Westbound Temporary Support Structure



SAS Temporary Support Structures and Tower Temporary Framing Erection

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

E Skyway Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$1,254.1 M

Status: Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), and contain approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by winches that were custom-made for this project.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Completed Skyway Left of Existing East Span



Western End of Completed Skyway



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge. This allows a portion of the upper deck of the existing bridge to be demolished to allow for a smooth transition for the new eastbound lanes in Oakland.

F Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.

Current Capital Outlay Forecast: \$211.0 M

Status: 85% Complete as of November 2009

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

Status: On the westbound structure, the contractor has completed all work and is now proceeding with eastbound superstructure work. The contractor, MCM, re-established temporary construction access to the Skyway structure over the new westbound Oakland Touchdown on August 4.

G Oakland Touchdown #2 Contract

Contractor: TBD

Current Capital Outlay Forecast: \$64.0 M

Status: In design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.



Oakland Touchdown Progress



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.



Archeological Investigations

East Span Interim Seismic Retrofit

Contractors: 1) California Engineering Contractors
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.



Existing East Span of Bay Bridge

Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Stormwater Retention Basin



Yerba Buena Island Substation

Contractor: West Bay Builders

Approved Capital Outlay Budget: \$11.6 M

Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture

Approved Capital Outlay Budget: \$9.2 M

Status: Completed December 2000

While common in offshore drilling, the new East Span is one of the first bridges to use large-diameter battered piles in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

H Existing Bridge Demolition

Contractor: TBD

Approved Capital Outlay Budget: \$239.2 M

Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

I Electrical Cable Relocation

Contractor: Manson Construction

Approved Capital Outlay Budget: \$9.6 M

Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new cables were run from Oakland to Treasure Island to replace the existing cable. The extra cable was funded by the Treasure Island Development Authority and its future development plans.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Other Completed Projects

The State Legislature in the 1990s identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

San Mateo-Hayward Bridge Seismic Retrofit Project

Project Status: Completed 2000

The San Mateo-Hayward Bridge seismic retrofit project focused on the strengthening of the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.



High-Rise Section of San Mateo-Hayward Bridge

1958 Carquinez Bridge Seismic Retrofit Project

Project Status: Completed 2002

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.

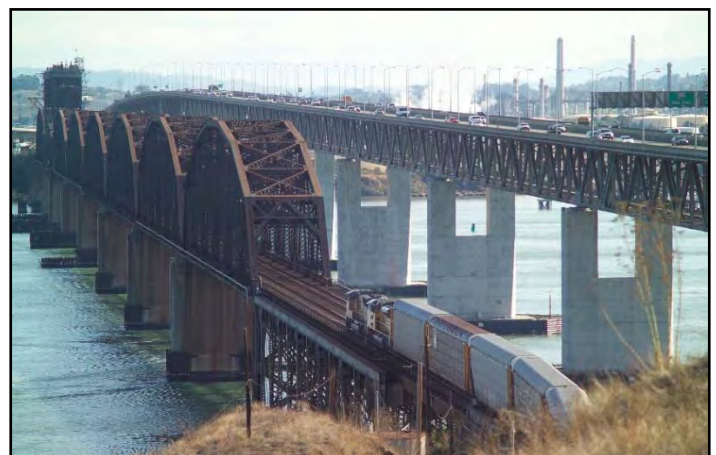


1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)

1962 Benicia-Martinez Bridge Seismic Retrofit Project

Project Status: Completed 2003

The southbound 1962 Benicia-Martinez Bridge was retrofitted to “Lifeline” status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



1962 Benicia-Martinez Bridge (right)

Richmond-San Rafael Bridge Seismic Retrofit Project

Project Status: Completed 2005

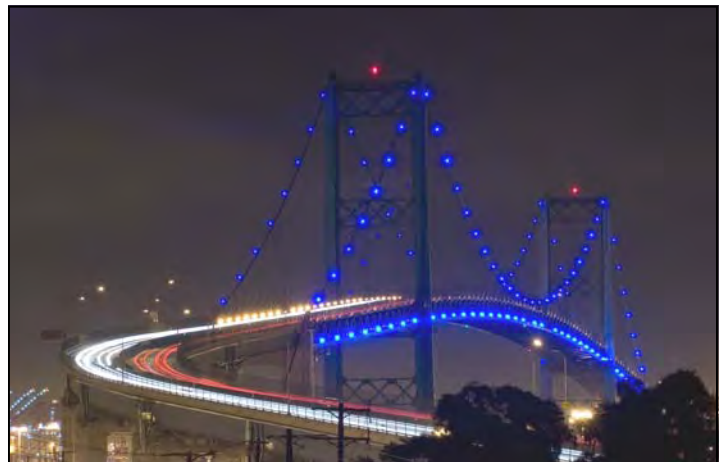
The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

Project Status: Completed 2000



Los Angeles-Vincent Thomas Bridge

San Diego-Coronado Bridge Seismic Retrofit Project

Project Status: Completed 2002



San Diego-Coronado Bridge





Antioch Bridge

Seismic Retrofit of the Dumbarton and Antioch Bridges

SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

Dumbarton Bridge Seismic Retrofit Project

Project Status: In Design

The Dumbarton Bridge was opened to traffic in 1982, linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile-long bridge carries average daily traffic of nearly 60,000 vehicles over its six lanes and has an eight-foot bicycle/pedestrian lane to the south.

Though located between the San Andreas and Hayward faults, the Dumbarton Bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded the bridge did not warrant retrofitting. The bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.



Mock-Up of Dumbarton Pier Columns Undergoing Seismic Testing



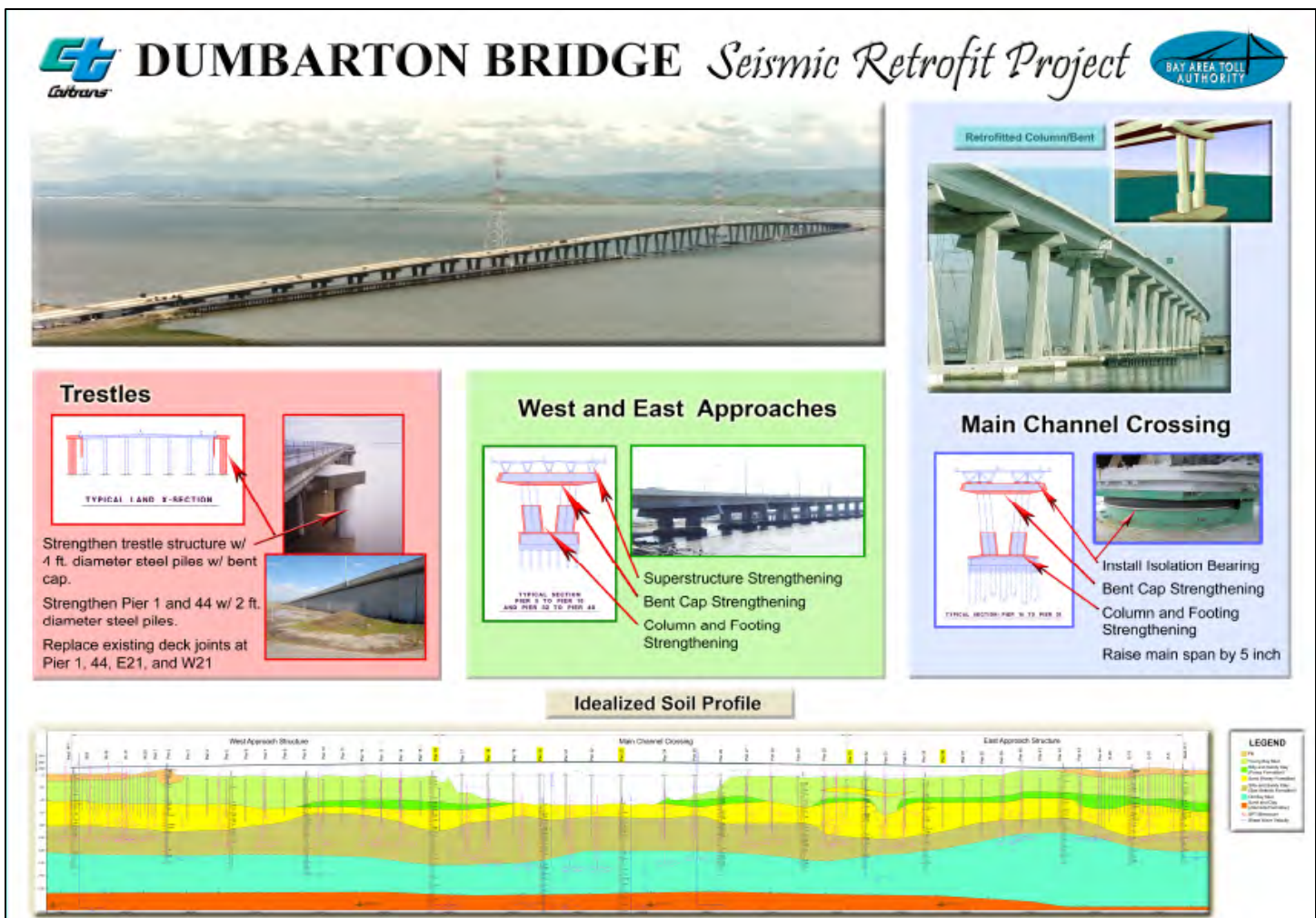
Existing Dumbarton Bridge Looking East toward the Alameda County Foothills

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps towards retrofitting the Dumbarton Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This includes detailed geotechnical and geophysical investigations at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Dumbarton Bridge includes superstructure and deck modifications, plus strengthening of the over land approach slab structures. Additional activities are identified in the attached diagram. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.

Status: On October 11, 2009, Governor Schwarzenegger approved Assembly Bill 1175 that added the Dumbarton and Antioch Bridges to the Toll Bridge Seismic Retrofit Program. BATA has now initiated efforts to raise tolls on the seven state-owned toll bridges in the Bay Area to, in part, fund the seismic retrofit of the Dumbarton and Antioch bridges.

BATA has already funded design plans for both bridge projects in anticipation of the projects being advertised in early 2010. The total estimated cost of these retrofits has been recently revised from \$950 million to \$750 million as project plans have been refined with reduced scope, which has minimized cost risks. In the future, the project progress report will be updated to better reflect the incorporation of these two projects into the Toll Bridge Seismic Retrofit Program.



SEISMIC RETROFIT OF DUMBARTON AND ANTIOCH BRIDGES

Antioch Bridge Seismic Retrofit Project

Project Status: In Design

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current bridge was opened in 1978 with one lane in each direction and carries an average of more than 10,000 vehicles a day. Approximately 1.8 miles long, the bridge is a steel girder support roadway on reinforced concrete columns and foundations.

Like the Dumbarton Bridge, the Antioch bridge was not included in the Toll Bridge Seismic Retrofit Program based on evaluations made in the 1990s that concluded that the bridge did not warrant retrofitting. The Antioch Bridge has since been re-evaluated for seismic vulnerability based on more recent seismic engineering, which has shown the bridge to be susceptible to damage from a major earthquake.

Based on the vulnerability studies and a follow-up sensitivity analysis of seismic risk, Caltrans and BATA decided to take steps toward retrofitting the Antioch Bridge, even though full funding for the project has not yet been identified. Using BATA toll bridge rehabilitation funding, a comprehensive seismic analysis of the bridge has commenced. This analysis includes detailed geotechnical and geophysical investigation at the bridge and the development of a seismic retrofit strategy and design plans.

The current retrofit strategy for the Antioch Bridge includes relatively minor modifications to the approach structure on Sherman Island, the addition of isolation bearings, strengthening of the columns, and hinge retrofits. The results of the seismic analysis and proposed retrofit strategy have been presented to the Toll Bridge Seismic Safety Peer Review Panel.



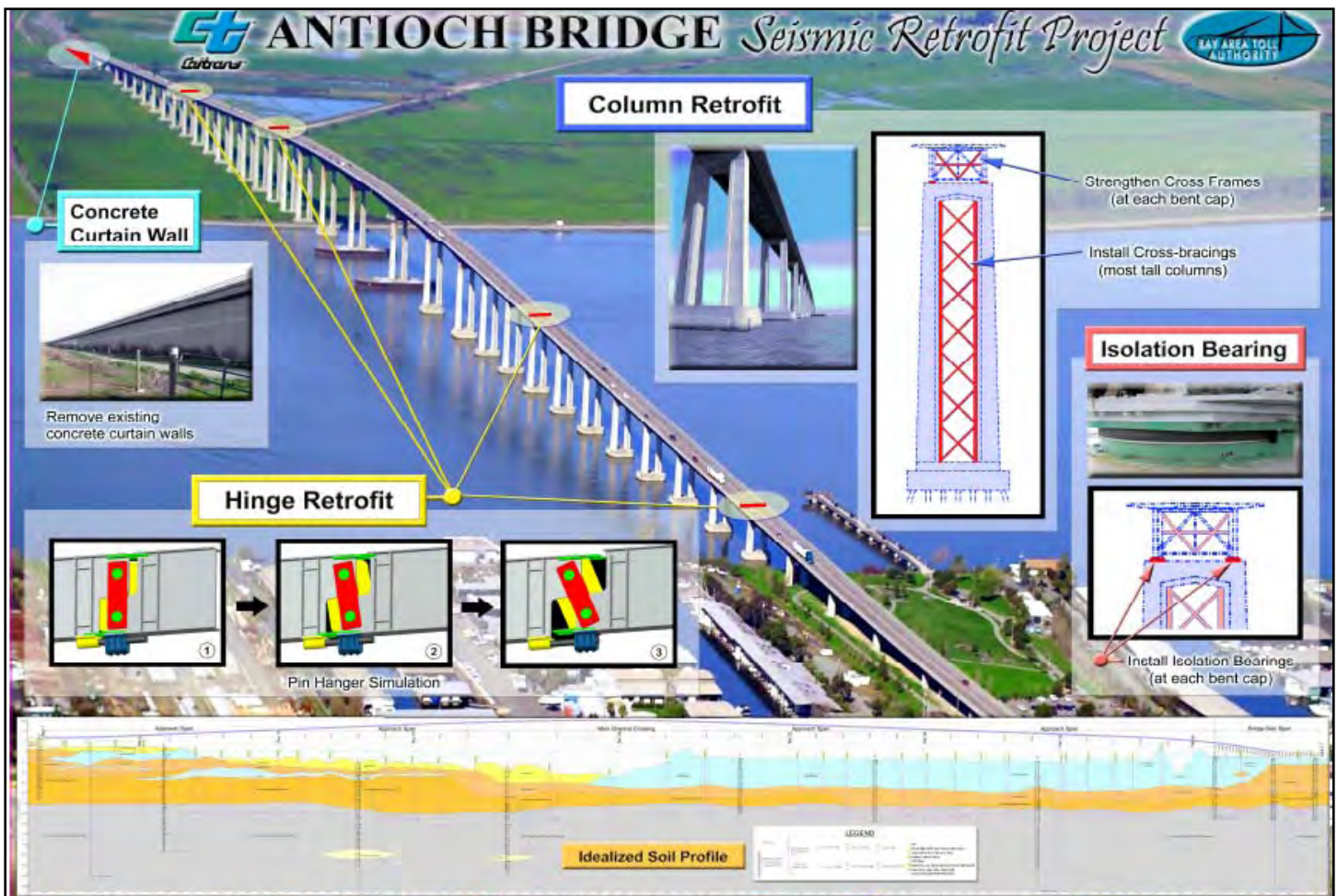
Antioch Bridge

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Prototype of Bearing for the Antioch Bridge Seismic Retrofit Project



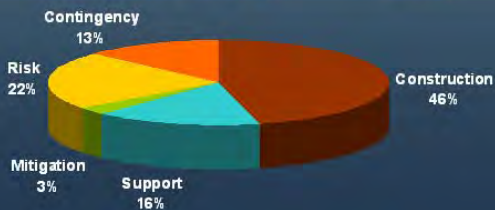
Seismic Retrofit Strategy Summary for Antioch Bridge

Seismic Retrofits of Dumbarton and Antioch Bridges

Project Cost and Schedule Summaries

Total Project Costs – \$750 Million

Description	Antioch (\$ Millions)	Dumbarton (\$ Millions)
CONSTRUCTION COST ESTIMATE (ESCALATION TO MID YEAR OF CONSTRUCTION)	\$98	\$195
CONTINGENCIES	45	65
SUBTOTAL CAPITAL COST ESTIMATE	143	260
SUPPORT COST ESTIMATE	39	95
MITIGATION COST ESTIMATE	13	10
RISK COST ESTIMATE	72	118
TOTAL COST ESTIMATE	\$267	\$483



Milestone	2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4
PSR Phase												
Begin Retrofit Strategy Study	(Apr 08) opt											
Geotechnical Investigations												
Geotechnical Investigations	(Jan08)											
Modeling and Analysis - As-Built												
Draft As-Built Analysis Report Ind. Testing	(Dec07-Feb08)											
Final As-Built Analysis Report	(Feb08-Apr08)											
Environmental												
Project Reports	(Feb08-Sep08)											
Permits - Environmental	(Feb08-Aug09)											
Agencies Permits												
Right of Way									(Jan08-Mar10)			
Office Engineering												
Strategy Meeting	(August 22, 2008)											
Submit Plan/Footprint for Permit	(September 1, 2008)											
Retrofit Strategy Estimate	(Aug08-Oct08)											
Final Strategy Report	(Nov08-Dec08)											
65% Unchecked Detail					(March 11, 2009)							
P & Q					(May09)							
Draft Structural PS&E					(Jun09)							
Structural PS&E					(Jul09)							
District PS&E					(Aug09)							
Ready to List									(Sep09-Mar10)			
Advertise									(Mar10-Jun10)			
Award									(Aug10)			
Testing					(Apr08-Jun09)							



Dumbarton Bridge





Richmond –San Rafael Bridge

REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

REGIONAL MEASURE 1 PROGRAM

New Benicia-Martinez Bridge Project

Project Status: New Bridge Completed 2007

The new Congressman George Miller Bridge opened to traffic in August 2007, taking its place alongside the existing 1962 Benicia-Martinez Bridge, which is named for Congressman Miller's father, the late George Miller, Jr. The new bridge carries five lanes of northbound Interstate 680 traffic, while the existing bridge is being upgraded to carry four lanes of southbound traffic and a new bicycle/pedestrian pathway.

Decades into the planning and construction, the new bridge is designed to a "Lifeline" seismic design standard, expected to be available for emergency response vehicles soon after a major seismic event. Constructed of lightweight concrete, the structure is one of the longest post-tensioned reinforced cast-in-place concrete bridges in the world. The new toll plaza, relocated from Benicia to Martinez, features the Bay Area's first FasTrak® express lanes, which vastly increase the throughput of vehicles using electronic toll collection.



New Benicia-Martinez Bridge Opened to Traffic in August 2007

1962 Benicia-Martinez Bridge Reconstruction Contract

Contractor: ACC/Top Grade, Joint Venture

Approved Capital Outlay Budget: \$59.5 M

Status: Complete

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge is being modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that will connect to Park Road in Benicia and to Marina Vista Boulevard in Martinez.

Stage 1 – Reconstruction of East Side of Bridge and Approaches

Completed in August 2008, this stage involved removal of the old toll plaza on the Benicia side of the bridge, deck repairs on the east side of the span, and repair of the roadway undulations on the southern approach just south of the Marina Vista interchange.



Mococo Road Bridge Jacking

Stage 2 – Reconstruction of West Side of Bridge and Approaches and Construction of Bicycle/Pedestrian Pathway

This stage began after southbound traffic was shifted from the west side of the bridge to the newly refurbished east side. It involves repairing the west-side bridge deck, repairing undulations on the west side of the roadway in Martinez, demolishing obsolete I-680/I-780 interchange structures, realigning southbound Interstate 680 for four lanes, and construction of the barrier separating traffic lanes from the bicycle/pedestrian path.

Status: A new southbound I-680 was opened to traffic in early August. The new bicycle/pedestrian path opened on August 29. The contract is now complete.



Benicia-Martinez Bridge Newly Opened Pedestrian/Bicycle Pathway



Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to The Public

REGIONAL MEASURE 1 PROGRAM

Interstate 880/State Route 92 Interchange Reconstruction Project

Project Status: Under Construction

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 74 and 75).



Future Interstate 880/State Route 92 Interchange (as simulated) ,Looking West toward San Mateo.

Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$155.0 M

Status: 52% Complete As Of November 2009



Overview of Progress to Date



Bents 2, 3 and 4 of the I-880/SR92 Interchange New Separation Bridge

Stage 1 – Construct East Route 92 to North Interstate 880 Connector

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical flyover structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

Status: ENCONN was completed and opened to detour traffic on May 16, 2009.

Stage 2 – Replace South Side of Route 92 Separation Structure

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south-Interstate-880-to-east-Route-92 traffic will stay on the remaining structure.

Status: Work on the south side of the separation structure has begun. Foundations and columns have been installed.

Stage 3 – Replace North Side of Route 92 Separation Structure

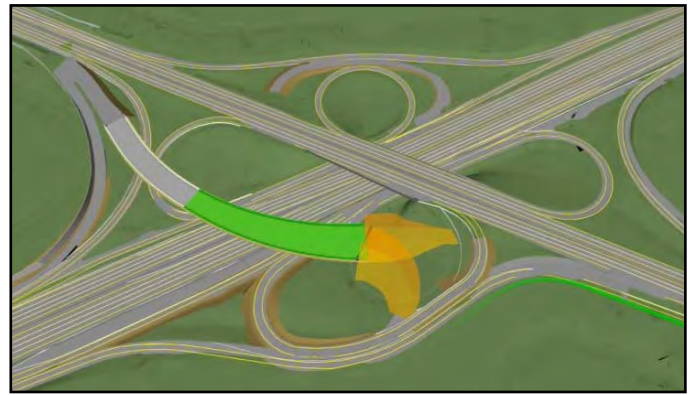
Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

Status: Pending Stage 2.

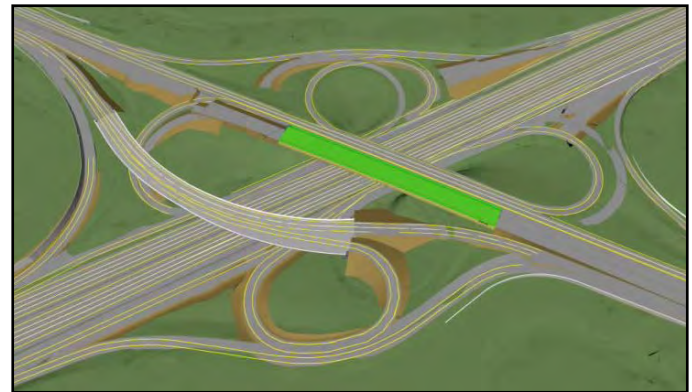
Stage 4 – Final Realignment and Other Work

Upon completion of the Route 92 separation structure, east Route 92 traffic can be shifted onto its permanent alignment from the new ENCONN and directly under the new separation structure. Along with the ENCONN and Route 92 separation structures, several soundwalls, a pedestrian overcrossing on I-880 at Eldridge Avenue and other ramps and structures will also be reconstructed as part of this project.

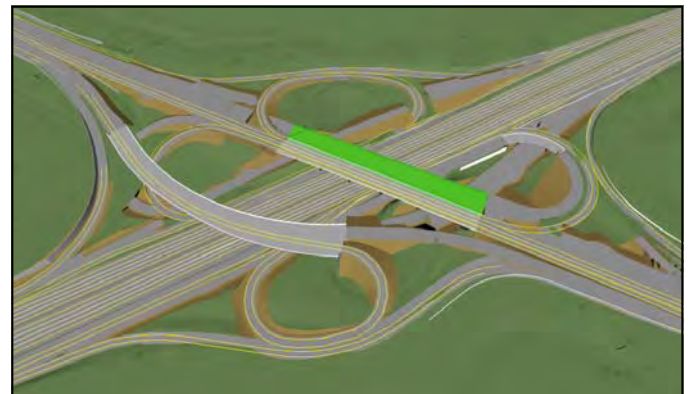
Status: Work continues on walls in the northwest (Stage 2), southeast and northeast quadrants, as well as on the Eldridge Avenue pedestrian overcrossing. The new pump station constructino is ongoing and scheduled to be completed in February 2010. The Calaroga Bridge is 50 percent complete.



Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector



Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure



Stage 4 - Final Realignment and Other Work

REGIONAL MEASURE 1 PROGRAM

Other Completed Projects

San Mateo-Hayward Bridge-Widening Project

Project Status: Completed 2003



This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.

Widening of the San Mateo-Hayward Bridge Trestle on Left

Richmond-San Rafael Bridge Rehabilitation Projects

Project Status: Completed 2006

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed:

- (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and
- (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

Richmond Parkway Construction Project

Project Status: Completed 2001

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

New Alfred Zampa Memorial (Carquinez) Bridge Project

Project Status: Completed 2003

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane shoulders and a bicycle and pedestrian pathway.

Bayfront Expressway (State Route 84) Widening Project

Project Status: Completed 2004

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.



Aerial View of the Existing Bridge and the Completed Skyway on the Right



APPENDICES

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Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.3	-	959.3	791.1	1,203.1	243.8
Capital Outlay Construction	4,492.2	269.4	4,761.6	3,101.4	5,041.1	279.5
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Total	5,486.6	266.1	5,752.7	3,893.2	6,251.9	499.2
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	-	120.0	116.8	117.0	(3.0)
Capital Outlay Construction	309.0	41.7	350.7	328.0	338.1	(12.6)
Total	429.0	41.7	470.7	444.8	455.1	(15.6)
SFOBB West Span Retrofit						
Capital Outlay Support	75.0	-	75.0	74.8	75.0	-
Capital Outlay Construction	232.9	-	232.9	227.2	232.9	-
Total	307.9	-	307.9	302.0	307.9	-
Richmond-San Rafael Bridge Retrofit						
Capital Outlay Support	134.0	(7.0)	127.0	126.7	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
Total	914.0	(97.5)	816.5	794.2	816.5	-
Benicia-Martinez Bridge Retrofit						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
Total	177.8	-	177.8	177.8	177.8	-
Carquinez Bridge Retrofit						
Capital Outlay Support	28.7	-	28.7	28.8	28.7	-
Capital Outlay Construction	85.5	-	85.5	85.4	85.5	-
Total	114.2	-	114.2	114.2	114.2	-
San Mateo-Hayward Bridge Retrofit						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	-	135.4	135.3	135.4	-
Total	163.5	-	163.5	163.4	163.5	-
Vincent Thomas Bridge Retrofit (Los Angeles)						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.0	42.1	-
Total	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	-	33.5	33.2	33.5	-
Capital Outlay Construction	70.0	-	70.0	69.4	70.0	-
Total	103.5	-	103.5	102.6	103.5	-
Subtotal Capital Outlay Support						
	1,433.1	(7.0)	1,426.1	1,254.0	1,666.9	240.8
Subtotal Capital Outlay						
	6,286.8	220.6	6,507.4	4,795.9	6,774.3	266.9
Subtotal Other Budgeted Capital						
	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Miscellaneous Program Costs						
	30.0	-	30.0	24.7	30.0	-
Subtotal Toll Bridge Seismic Retrofit Program						
	7,785.0	210.3	7,995.3	6,075.3	8,478.9	483.6
Programatic Risk						
	-	-	-	-	165.4	165.4
Program Contingency						
	900.0	(210.3)	689.7	-	40.7	(649.0)
Total Toll Bridge Seismic Retrofit Program						
	8,685.0	-	8,685.0	6,075.3	8,685.0	-

Note: Details may not sum to totals due to rounding effects.

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of Nov 2009 See Note (1)	Estimated Costs not yet Spent or Encumbered as of Nov 2009	Total Forecast as of Nov 2009
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	472.6	0.1	472.7
Total	617.5	617.5	617.2	0.4	617.6
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.7	0.3	127.0
Capital Outlay	698.0	689.5	674.2	15.3	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	800.9	15.6	816.5
West Span Retrofit					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	232.7	0.2	232.9
Total	307.9	307.9	307.5	0.4	307.9
West Approach					
Capital Outlay Support	120.0	120.0	117.5	(0.5)	117.0
Capital Outlay	309.0	350.7	342.5	(4.4)	338.1
Total	429.0	470.7	460.0	(4.9)	455.1
SFOBB East Span - Skyway					
Capital Outlay Support	197.0	181.0	181.3	(0.2)	181.1
Capital Outlay	1,293.0	1,254.1	1,412.1	(158.0)	1,254.1
Total	1,490.0	1,435.1	1,593.4	(158.2)	1,435.2
SFOBB East Span - SAS- Superstructure					
Capital Outlay Support	214.6	214.6	196.8	216.1	412.9
Capital Outlay	1,753.7	1,753.7	1,649.6	364.5	2,014.1
Total	1,968.3	1,968.3	1,846.4	580.6	2,427.0
SFOBB East Span - SAS- Foundations					
Capital Outlay Support	62.5	41.0	37.6	1.0	38.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
Total	402.4	348.3	346.3	(0.4)	345.9
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.1	0.5	10.6
Capital Outlay	15.6	15.6	16.6	(0.9)	15.7
Total	26.2	26.2	26.7	(0.4)	26.3
YBI Detour					
Capital Outlay Support	29.5	66.0	77.8	7.7	85.5
Capital Outlay	131.9	492.8	493.0	11.0	504.0
Total	161.4	558.8	570.8	18.7	589.5
YBI - Transition Structures					
Capital Outlay Support	78.7	78.7	16.4	89.1	105.5
Capital Outlay	299.4	276.1	0.1	285.8	285.9
Total	378.1	354.8	16.5	374.9	391.4
Oakland Touchdown					
Capital Outlay Support	74.4	74.4	69.8	25.5	95.3
Capital Outlay	283.8	283.8	218.0	71.0	289.0
Total	358.2	358.2	287.8	96.5	384.3
East Span Other Small Project					
Capital Outlay Support	212.3	213.3	209.8	3.7	213.5
Capital Outlay	170.8	170.8	94.0	52.6	146.6
Total	383.1	384.1	303.8	56.3	360.1
Existing Bridge Demolition					
Capital Outlay Support	79.7	79.7	0.4	59.6	60.0
Capital Outlay	239.2	239.2	-	232.1	232.1
Total	318.9	318.9	0.4	291.7	292.1
Miscellaneous Program Costs	30.0	30.0	25.3	4.7	30.0
Total Capital Outlay Support (2)	1,463.2	1,456.2	1,288.9	408.0	1,696.9
Total Capital Outlay	6,321.8	6,539.1	5,914.1	867.9	6,782.0
Program Total	7,785.0	7,995.3	7,203.0	1,275.9	8,478.9

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based on Bechtel Infrastructure Corporation input.

This column is subject to revision upon completion of Department's risk assessment update.

(3). Total Capital Outlay Support includes program indirect costs.

Notes: * Budget for Richmond-San Rafael Bridge includes \$16.9 million of deck joint rehabilitation work that is considered to be eligible for seismic retrofit program funding.

Note: Details may not sum to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
San Francisco-Oakland Bay Bridge							
East Span Replacement Project							
East Span - Skyway	01202X						
Capital Outlay Support		197.0	(16.0)	181.0	181.1	181.1	0.1
Capital Outlay Construction		1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
Total		1,490.0	(54.9)	1,435.1	1,418.0	1,435.2	0.1
East Span - SAS E2/T1 Foundations	0120EX						
Capital Outlay Support		52.5	(21.5)	31.0	28.4	28.6	(2.4)
Capital Outlay Construction		313.5	(32.6)	280.9	275.0	280.9	-
Total		366.0	(54.1)	311.9	303.4	309.5	(2.4)
East Span - SAS Superstructure	0120FX						
Capital Outlay Support		214.6	-	214.6	191.4	412.9	198.3
Capital Outlay Construction		1,753.7	-	1,753.7	836.1	2,014.1	260.4
Total		1,968.3	-	1,968.3	1,027.5	2,427.0	458.7
SAS W2 Foundations	0120CX						
Capital Outlay Support		10.0	-	10.0	9.2	10.0	-
Capital Outlay Construction		26.4	-	26.4	25.8	26.4	-
Total		36.4	-	36.4	35.0	36.4	-
YBI South/South Detour	0120RX						
Capital Outlay Support		29.4	36.6	66.0	76.3	85.5	19.5
Capital Outlay Construction		132.0	360.8	492.8	399.3	504.0	11.2
Total		161.4	397.4	558.8	475.6	589.5	30.7
YBI Transition Structures (see notes below)	0120PX						
Capital Outlay Support		78.7	-	78.7	28.4	105.5	26.8
Capital Outlay Construction		299.3	(23.2)	276.1	-	285.9	9.8
Total		378.0	(23.2)	354.8	28.4	391.4	36.6
* YBI- Transition Structures							
Contract No. 1							
Capital Outlay Support					8.5	65.1	
Capital Outlay Construction					-	223.2	
Total					8.5	288.3	
* YBI- Transition Structures							
Contract No. 2							
Capital Outlay Support					3.5	23.4	
Capital Outlay Construction					-	59.4	
Total					3.5	82.8	
* YBI- Transition Structures							
Contract No. 3 Landscape							
Capital Outlay Support					-	1.0	
Capital Outlay Construction					-	3.3	
Total					-	4.3	
Oakland Touchdown (see notes below)							
	01204X						
Capital Outlay Support		74.4	-	74.4	68.0	95.3	20.9
Capital Outlay Construction		283.8	-	283.8	197.0	289.0	5.2
Total		358.2	-	358.2	265.0	384.3	26.1
* OTD Submarine Cable							
	0120K4						
Capital Outlay Support					0.9	0.9	
Capital Outlay Construction					7.9	9.6	
Total					8.8	10.5	
* OTD No. 1 (Westbound)							
	0120L4						
Capital Outlay Support					41.3	50.4	
Capital Outlay Construction					189.1	211.0	
Total					230.4	261.4	
* OTD No. 2 (Eastbound)							
	0120M4						
Capital Outlay Support					5.1	20.5	
Capital Outlay Construction					-	64.0	
Total					5.1	84.5	
* OTD Electrical Systems							
	0120N4						
Capital Outlay Support					0.8	1.5	
Capital Outlay Construction					-	4.4	
Total					0.8	5.9	
Notes: YBI Transition Structures and Oakland Touchdown Cost-to-Date and Cost Forecast includes prior-to-split Capital Outlay							

Note: Details may not sum to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through November 30, 2009 (\$ Millions) (continued)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Existing Bridge Demolition	01209X						
Capital Outlay Support		79.7	-	79.7	0.4	60.0	(19.7)
Capital Outlay Construction		239.2	-	239.2	-	232.1	(7.1)
Total		318.9	-	318.9	0.4	292.1	(26.8)
YBI/SAS Archeology	01207X						
Capital Outlay Support		1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction		1.1	-	1.1	1.1	1.1	-
Total		2.2	-	2.2	2.2	2.2	-
YBI - USCG Road Relocation	0120QX						
Capital Outlay Support		3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction		3.0	-	3.0	2.8	3.0	-
Total		6.0	-	6.0	5.5	6.0	-
YBI - Substation and Viaduct	0120GX						
Capital Outlay Support		6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction		11.6	-	11.6	11.3	11.6	-
Total		18.1	-	18.1	17.7	18.1	-
Oakland Geofill	01205X						
Capital Outlay Support		2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction		8.2	-	8.2	8.2	8.2	-
Total		10.7	-	10.7	10.7	10.7	-
Pile Installation Demonstration Project	01208X						
Capital Outlay Support		1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction		9.2	-	9.2	9.2	9.2	-
Total		11.0	-	11.0	11.0	11.0	-
Stormwater Treatment Measures	0120JX						
Capital Outlay Support		6.0	2.0	8.0	8.1	8.2	0.2
Capital Outlay Construction		15.0	3.3	18.3	16.7	18.3	-
Total		21.0	5.3	26.3	24.8	26.5	0.2
Right-of-Way and Environmental Mitigation	0120X9						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay & Right-of-Way		72.4	-	72.4	51.2	72.4	-
Total		72.4	-	72.4	51.2	72.4	-
Sunk Cost - Existing East Span Retrofit	04343X & 04300X						
Capital Outlay Support		39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction		30.8	-	30.8	30.8	30.8	-
Total		70.3	-	70.3	70.3	70.3	-
Other Capital Outlay Support							
Environmental Phase		97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures		44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs		20.0	(1.0)	19.0	3.2	19.0	-
Total		162.6	(1.0)	161.6	145.8	161.6	-
Subtotal Capital Outlay Support		959.3	-	959.3	791.1	1,203.1	243.8
Subtotal Capital Outlay Construction		4,492.2	269.4	4,761.6	3,101.4	5,041.1	279.5
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)
Total SFOBB East Span Replacement Project		5,486.6	266.1	5,752.7	3,893.2	6,251.9	499.2

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project							
New Bridge	00603_						
Capital Outlay Support							
BATA Funding		84.9	6.9	91.8	91.8	91.8	-
Non-BATA Funding		-	0.1	0.1	0.1	0.1	-
Subtotal		84.9	7.0	91.9	91.9	91.9	-
Capital Outlay Construction				-			-
BATA Funding		661.9	94.6	756.5	753.8	756.5	-
Non-BATA Funding		10.1	-	10.1	10.1	10.1	-
Subtotal		672.0	94.6	766.6	763.9	766.6	-
Total		756.9	101.6	858.5	855.8	858.5	-
I-680/I-780 Interchange Reconstruction							
00606_							
Capital Outlay Support							
BATA Funding		24.9	5.2	30.1	30.1	30.1	-
Non-BATA Funding		1.4	5.2	6.6	6.3	6.6	-
Subtotal		26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction							
BATA Funding		54.7	26.9	81.6	77.1	81.6	-
Non-BATA Funding		21.6	-	21.6	21.7	21.6	-
Subtotal		76.3	26.9	103.2	98.8	103.2	-
Total		102.6	37.3	139.9	135.2	139.9	-
I-680/Marina Vista Interchange Reconstruction							
00605_							
Capital Outlay Support		18.3	1.8	20.1	20.1	20.1	-
Capital Outlay Construction		51.5	4.9	56.4	56.1	56.4	-
Total		69.8	6.7	76.5	76.2	76.5	-
New Toll Plaza and Administration Building							
00604_							
Capital Outlay Support		11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction		24.3	2.0	26.3	25.1	26.3	-
Total		36.2	5.8	42.0	40.8	42.0	-
Existing Bridge & Interchange Modifications							
0060A_							
Capital Outlay Support							
BATA Funding		4.3	13.5	17.8	17.6	17.8	-
Non-BATA Funding		-	0.9	0.9	0.8	0.9	-
Subtotal		4.3	14.4	18.7	18.4	18.7	-
Capital Outlay Construction							
BATA Funding		17.2	32.8	50.0	36.5	50.0	-
Non-BATA Funding		-	9.5	9.5	-	9.5	-
Subtotal		17.2	42.3	59.5	36.5	59.5	-
Total		21.5	56.7	78.2	54.9	78.2	-
Other Contracts							
See note below							
Capital Outlay Support		11.4	(2.3)	9.1	8.7	9.1	-
Capital Outlay Construction		20.3	3.3	23.6	17.3	23.6	-
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Total		52.1	0.9	53.0	43.0	53.0	-
Subtotal BATA Capital Outlay Support		155.7	28.9	184.6	184.0	184.6	-
Subtotal BATA Capital Outlay Construction		829.9	164.5	994.4	965.9	994.4	-
Subtotal Capital Outlay Right-of-Way		20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support		1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction		31.7	9.5	41.2	31.8	41.2	-
Project Reserves		20.8	3.6	24.4	-	24.4	-
Total New Benicia-Martinez Bridge Project		1,059.9	212.6	1,272.5	1,205.9	1,272.5	-

Notes: Includes EA's 00601_, 00603_, 00605_, 00606_, 00608_, 00609_, 0060A_, 0060C_, 0060E_, 0060F_, 0060G_, and 0060H_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (11/2009)	Cost To Date (11/2009)	Cost Forecast (11/2009)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Carquinez Bridge Replacement Project							
New Bridge	01301_						
Capital Outlay Support		60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction		253.3	2.7	256.0	255.9	256.0	-
Total		313.8	2.4	316.2	316.1	316.2	-
Crockett Interchange Reconstruction							
	01305_						
Capital Outlay Support		32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction		73.9	(1.9)	72.0	71.9	72.0	-
Total		105.9	(2.0)	103.9	103.8	103.9	-
Existing 1927 Bridge Demolition							
	01309_						
Capital Outlay Support		16.1	(0.5)	15.6	15.6	15.6	-
Capital Outlay Construction		35.2	-	35.2	34.8	35.2	-
Total		51.3	(0.5)	50.8	50.4	50.8	-
Other Contracts							
	See note below						
Capital Outlay Support		15.8	1.2	17.0	16.3	17.0	-
Capital Outlay Construction		18.8	(1.2)	17.6	16.2	17.6	-
Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
Total		45.1	(0.1)	45.0	42.4	45.0	-
Subtotal BATA Capital Outlay Support		124.4	0.3	124.7	124.0	124.7	-
Subtotal BATA Capital Outlay Construction		381.2	(0.4)	380.8	378.8	380.8	-
Subtotal Capital Outlay Right-of-Way		10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves		12.1	(9.8)	2.3	-	2.3	-
Total Carquinez Bridge Replacement Project		528.2	(10.0)	518.2	512.7	518.2	-

Notes:

Other Contracts includes EA's 01301_01302_, 01303_, 01304_01305_01306_, 01307_, 01308_, 01309_0130A_, 0130C_, 0130D_, 0130F_, 0130G_, 0130H_, 0130J_, 00453_, 00493_, 04700_, 00607_, 2A270_, and 29920_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) (Continued)

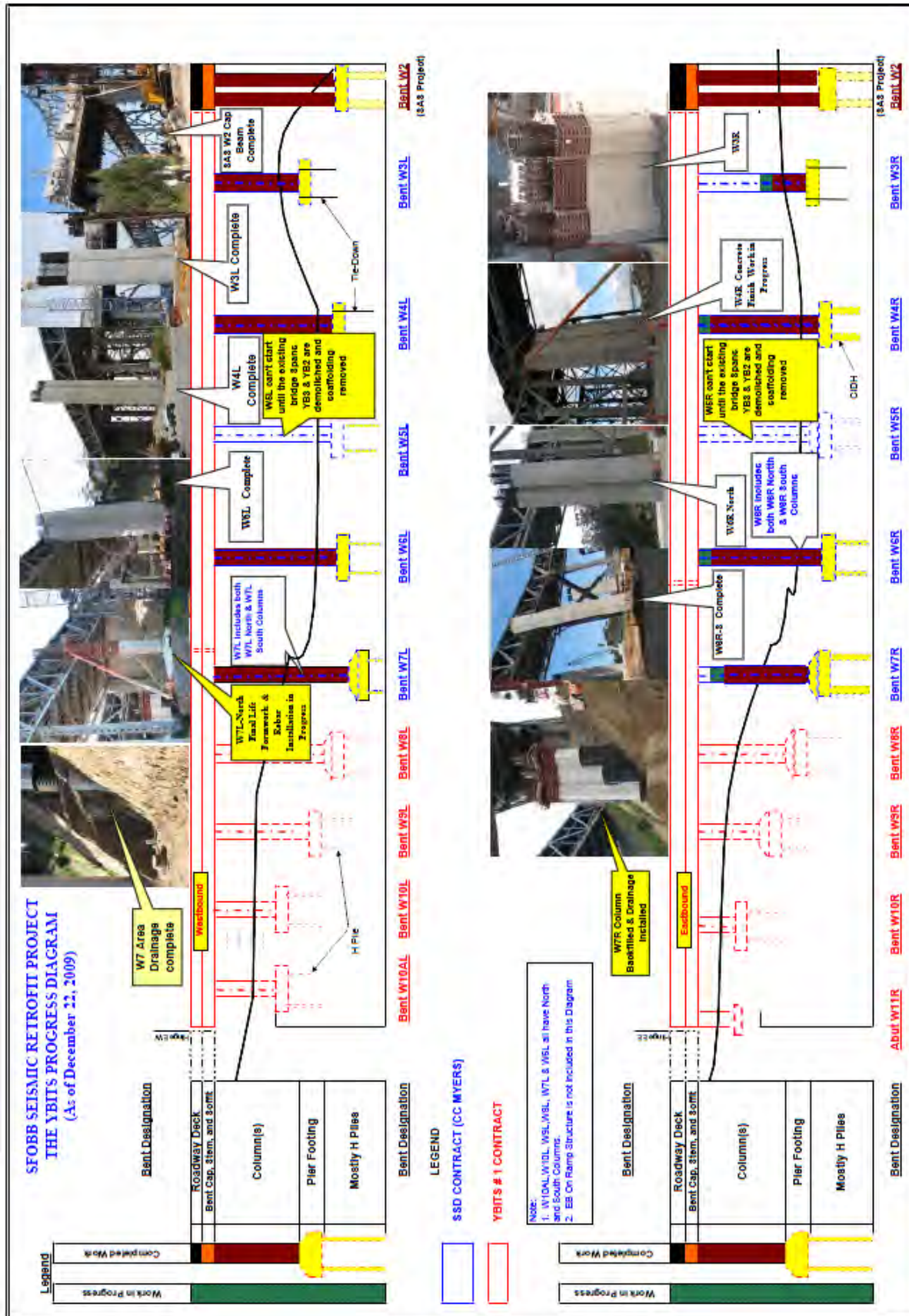
Project a	EA Number b	BATA Budget (07/2005) c	Approved Changes d	Current Approved Budget (11/2009) e = c + d	Cost To Date (11/2009) f	Cost Forecast (11/2009) g	At- Completion Variance h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation			See note ¹ below				
Capital Outlay Support							
BATA Funding		2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding		8.6	1.8	10.4	10.4	10.4	-
Subtotal		10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction							
BATA Funding		40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding		51.1	-	51.1	51.1	51.1	-
Subtotal		91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves		-	0.8	0.8	-	0.8	-
Total		102.1	(5.0)	97.1	96.2	97.1	-
Rehabilitation	04152_						
Capital Outlay Support							
BATA Funding		4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding		4.0	(4.0)	-	-	-	-
Subtotal		8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction		16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves		0.1	0.3	0.4	-	0.4	-
Total		25.0	(5.0)	20.0	19.6	20.0	-
Richmond Parkway Project (RM 1 Share Only)	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	4.3	5.9	-
Total		5.9	-	5.9	4.3	5.9	-
San Mateo-Hayward Bridge Widening	See note ² below						
Capital Outlay Support		34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction		180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way		1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves		1.5	(0.5)	1.0	-	1.0	-
Total		217.8	(8.0)	209.8	208.7	209.8	-
I-880/SR-92 Interchange Reconstruction	EA's 23317_, 01601_, and 01602_						
Capital Outlay Support		28.8	34.6	63.4	50.7	63.4	-
Capital Outlay Construction							
BATA Funding		85.2	60.2	145.4	80.8	145.4	-
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	60.2	155.0	80.8	155.0	-
Capital Outlay Right-of-Way		9.9	7.0	16.9	11.9	16.9	-
Project Reserves		0.3	9.4	9.7	-	9.7	-
Total		133.8	111.2	245.0	143.4	245.0	-
Bayfront Expressway Widening	EA's 00487_, 01511_, and 01512_						
Capital Outlay Support		8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction		26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way		0.2	-	0.2	0.2	0.2	-
Project Reserves		0.8	(0.3)	0.5	-	0.5	-
Total		36.1	(2.0)	34.1	33.4	34.1	-
US 101/University Avenue Interchange Modification	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
Total		3.8	-	3.8	3.7	3.8	-
Subtotal BATA Capital Outlay Support		358.3	61.6	419.9	405.8	419.9	-
Subtotal BATA Capital Outlay Construction		1,569.8	209.3	1,779.1	1,682.1	1,779.1	-
Subtotal Capital Outlay Right-of-Way		42.5	5.9	48.4	39.5	48.4	-
Subtotal Non-BATA Capital Outlay Support		14.0	4.0	18.0	17.6	18.0	-
Subtotal Non-BATA Capital Outlay Construction		92.4	9.5	101.9	82.9	101.9	-
Project Reserves		35.6	3.5	39.1	-	39.1	-
Total RM1 Program		2,112.6	293.8	2,406.4	2,227.9	2,406.4	-

Notes:

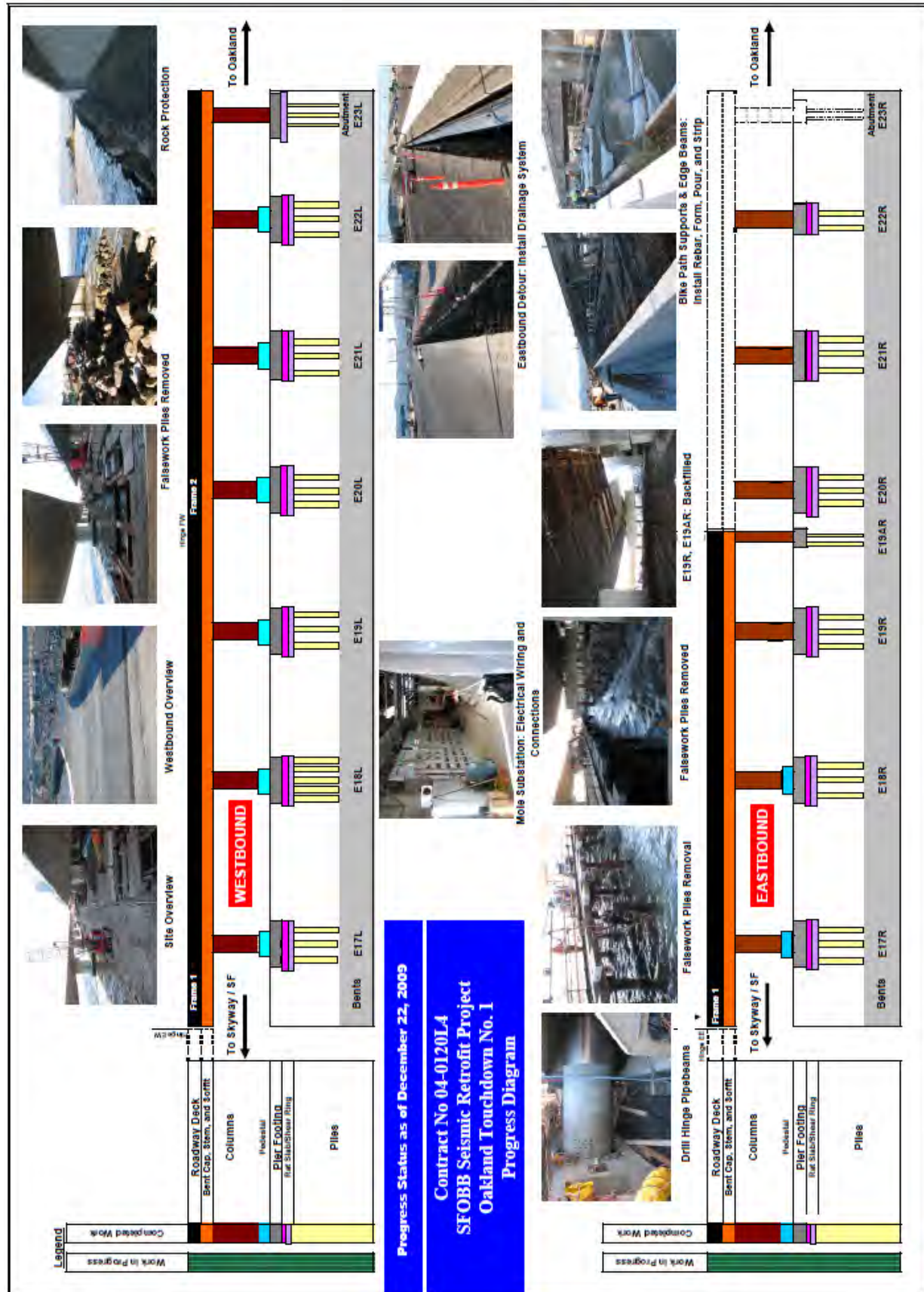
¹ Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_² San Mateo-Hayward Bridge Widening Includes EA's 00305_, 04501_, 04502_, 04503_, 04504_, 04505_, 04506_, 04507_, 04508_, 04509_, 27740_, 27790_, 04860_

Note: Details may not sum to totals due to rounding effects.

Appendix D: YBITS Advanced Work Project Progress Diagram



Appendix E: OTD #1 Program Diagram





Appendix F: Project Progress Photographs

Skyway Piers Looking West

Appendix F: Project Progress Photographs

Yerba Buena Island Detour Existing Bridge Demolition



YBID Existing Bridge Span YB4 Being Demolished



YBID Existing Span YB4 Top Deck Demolished



Existing Bridge Span YB2 Being Demolished

Appendix F: Project Progress Photographs

Self-Anchored Suspension Bridge Fabrication



SAS OBG Lift 11 Assembly in Bay 13



SAS Bearing Stiffener Being Fitted to the Lift 1 East Shaft



SAS Tower Fabrication Overview



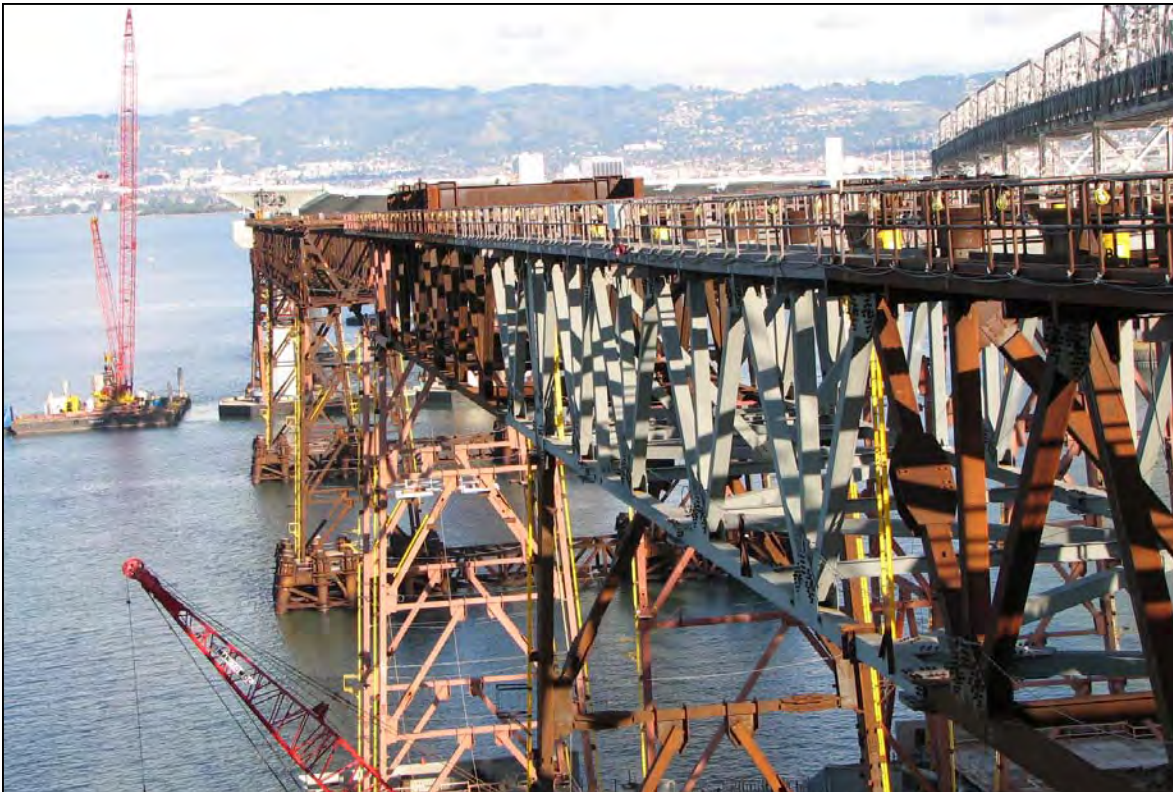
SAS OBG Lift 3W Being Loaded onto the Ship

Appendix F: Project Progress Photographs

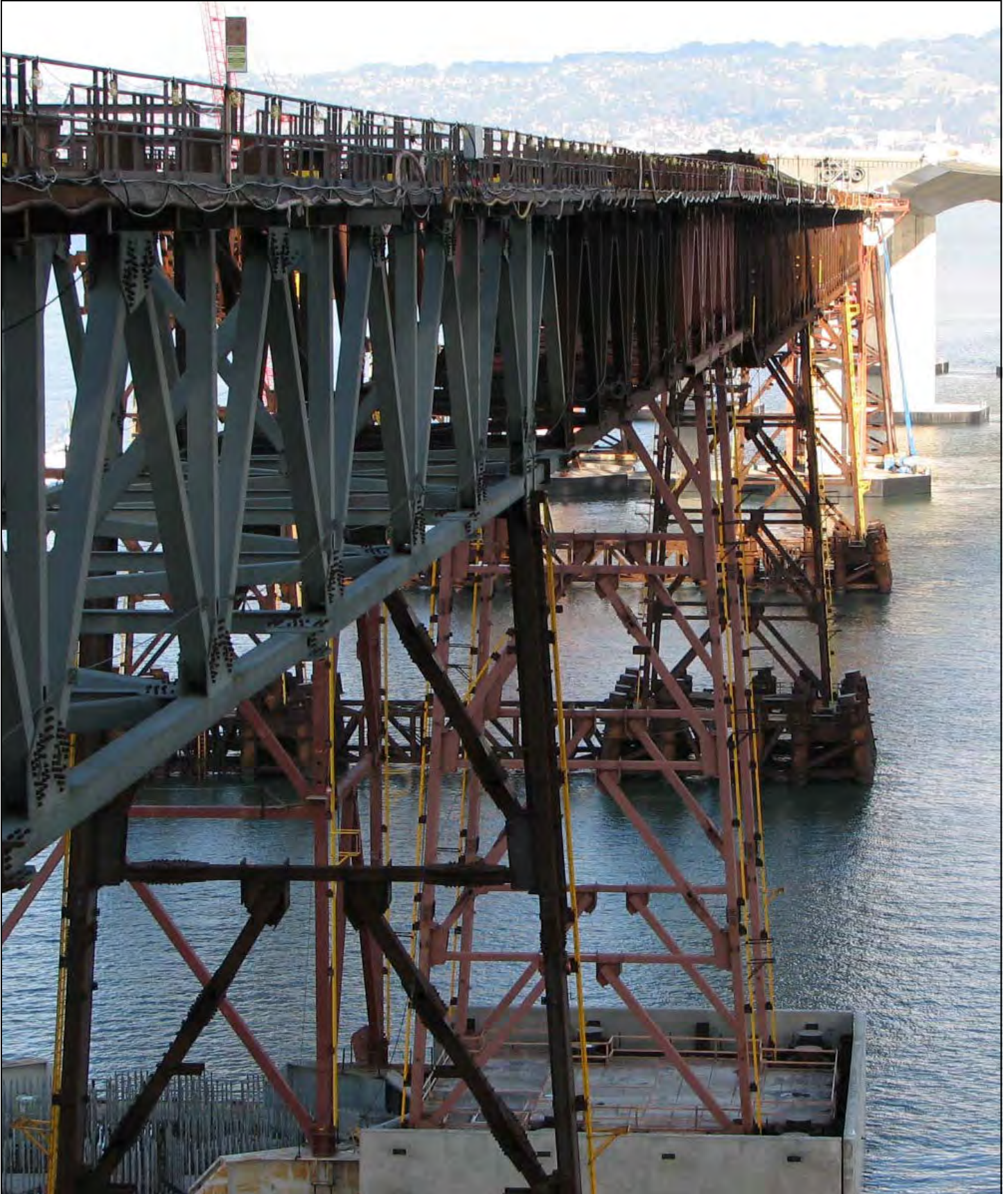
Self-Anchored Suspension Bridge Field Work



SAS - T1 Trestle Construction Overview



SAS Westbound Temporary Support Structures



SAS Eastbound Temporary Support Structures Looking East

Appendix F: Project Progress Photographs

Oakland Touchdown



Oakland Touchdown Falsework Removal



Oakland Touchdown Mole Substation Exterior View



Oakland Touchdown Eastbound Detour Road Paved



Oakland Touchdown Westbound Falsework Piles Removed

Appendix F: Project Progress Photographs

92/880 Interchange



92/880 Widening at Mount Eden Overhead Crossing



92/880 Pump Station Construction in Progress



92/880 Site Preparation of New Route 92 and Interstate 880 Separator

Appendix G: Glossary of Terms

AB144/SB 66 BUDGET: The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

BATA BUDGET: The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

APPROVED CHANGES: For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

CURRENT APPROVED BUDGET: The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

COST TO DATE: The actual expenditures incurred by the program, project or contract as of the month and year shown.

COST FORECAST: The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

AT COMPLETION VARIANCE or VARIANCE (cost): The mathematical difference between the Cost Forecast and the Current Approved Budget.

AB 144/SB 66 PROJECT COMPLETE BASELINE: The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

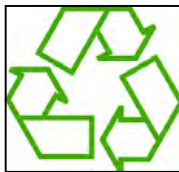
BATA PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

PROJECT COMPLETE SCHEDULE FORECAST: The current projected date for the completion of the program, project, or contract.

SCHEDULE VARIANCE or VARIANCE (schedule): The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

% COMPLETE: % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.



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The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is \$1,574,873.73.

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